GAS

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To you it may now seem an old story, but to most of your prospects it's news. And what news! News of release from drudgery. News of a sure way to better, tastier, healthier food. News of time-saving and money-saving cookery.

When you demonstrate, demonstrate all—all the many features that have transformed the gas range, all the advantages they bring, all the pride that you take in helping to modernize America's kitchens.

Show what a great stride forward is marked by automatic oven heat control. Show not only what it is but what it does. Remember, enthusiasm begets enthusiasm, and enthusiasm opens purses.

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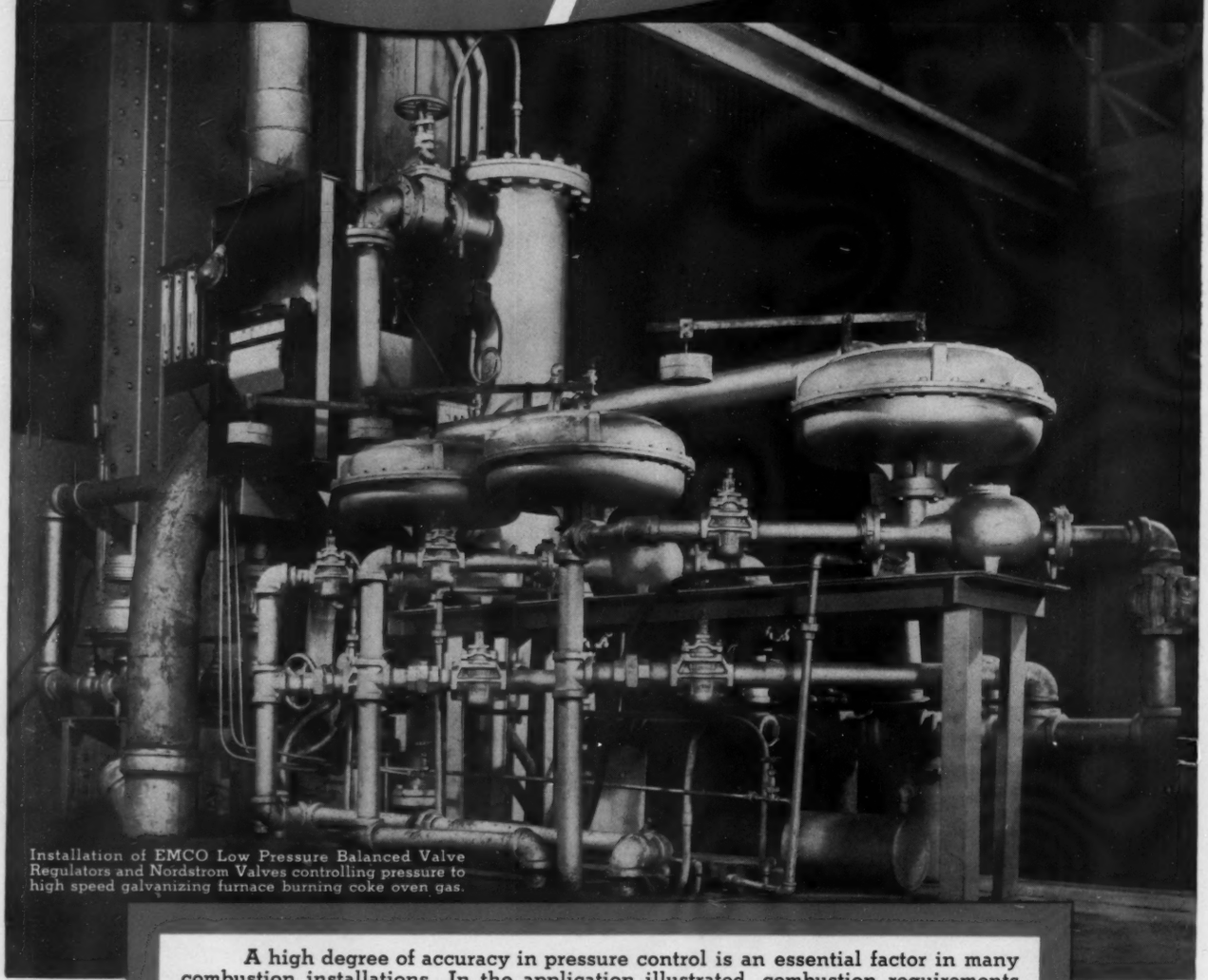
ROBERTSHAW OVEN HEAT CONTROLS

NOVEMBER 1938 • • 25 CENTS

EMCO adaptability



Installation of EMCO Low Pressure Balanced Valve Regulators and Nordstrom Valves controlling pressure to high speed galvanizing furnace burning coke oven gas.

A high degree of accuracy in pressure control is an essential factor in many combustion installations. In the application illustrated, combustion requirements dictated an accuracy of 0.1 inch of water column under widely varying conditions. To do this, EMCO Low Pressure Balanced Valve Regulators were chosen. Previous experience in hundreds of cases has proven that the design and adaptability of EMCO Regulators assures the accuracy of performance required.

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MERCO NORDSTROM VALVE CO.

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PRICE per foot installed is an uncertain index of the eventual cost of an underground main which is intended as a permanent installation. The real yardstick is the *cost per service year.* With a useful life of more than 100 years—with maintenance cost either nil or negligible —cast iron pipe is by far the lowest-cost material on a service year basis. This is a matter of record.

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Foundries and Sales Offices throughout the U. S. A.

Makers of U. S. Super-de Lavaud Centrifugally Cast Pipe and U. S. Pit Cast Pipe

U.S. CAST IRON PIPE

ADVERTISERS' INDEX

American Brass Co. ..
American Meter Co. 16
American Stove Co. 51

The Barber Gas Burner Co. 55
Barber-Greene ..
H. R. Basford Co. 64
Blaw-Knox Co. 3

The Cast Iron Pipe Research Ass'n 6
The Chaplin-Fulton Manufacturing Co. 46
Chicago Vitreous Enamel Product Co. ..
Clark Hotel 70
The Cleveland Trencher Co. 69
Community Chest 63
Condensation Engineering Corp. 54
Connelly Iron Sponge & Governor Co. 56
The Cooper-Bessemer Corp. 57
Crane Co. 9
Cribben & Sexton Co. 14

Dearborn Chemical Co. 66
Detroit-Michigan Stove Co. ..

Electrogas Furnace Co. 64
Ensign Carburetor Co., Ltd. 66

Fisher Governor Co. 10
Fluor Corp., Ltd. 3rd Cover
Fraser Furnace Co. 64

General Controls 48
General Gas Light Co. 69, 73
James Graham Manufacturing Co. 53
Greenlee Tool Co. 73

Handbook Butane-Propane Gases, 2nd Edition 62
Homestead Heater Co. 74
Hydrauger Corp., Ltd. 50

Inland Manufacturing Co. 56

Johnson Gas Appliance Co. 72

Kerotest Manufacturing Co. ..
Kitson Co. 54

P. M. Lattner Mfg. Co. 61

Merco Nordstrom Valve Co. 41, 42
Milwaukee Gas Specialty Co. 70
L. J. Mueller Furnace Co. 68
Mueller Co. 70

The National Supply Co. 4
National Tube Co. ..

Pacific Coast Gas Association, Inc. 67
Pacific Gas and Electric Co. 65
Pacific Gas Radiator Co. 52
Pacific Meter Works 16
Parkhill-Wade 8
Payne Furnace & Supply Co. 49
Pittsburgh Equitable Meter Co. 2nd Cover
Porcelain Enamel Institute 72
Pressed Steel Tank Co. 61

Quigley Co., Inc. 12

Reliance Regulator Corp. 11
Reynolds Gas Regulator Co. 13
Robertshaw Thermostat Co. Front Cover
George D. Roper Corp. 47
Royal Air Conditioning Equipment Co. 74

Semet-Solvay Engineering Corp. 5
Servel, Inc., Electrolux Sales Div. ..
Sharples Solvents Corp. 7
M. B. Skinner Co. ..
Spencer Thermostat Co. 64
The Sprague Meter Co. 4th Cover
Standard Oil Co. of California 71

United States Pipe & Foundry Co. 1
United States Steel Corp. ..

Webster Engineering Co. ..
Welsbach Co. 71

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Contents for November, 1938

GUEST EDITORIAL: The Woman's Viewpoint . . . *By Jessie McQueen* 15

Thermally Thinking . . . . . *By Stanley Jenks* 17

A.G.A.'s 20th Convention . . . . . *By Stanley Jenks* 19

G A S Camera in Atlantic City 21

Building the Oklahoma Natural Gas Co.'s New Cement Field Pipe Line 26
By J. C. Albright

This Job of Selling Gas . . . . . *By Merrill N. Davis* 28

In Justice to Gas Heating . . . . . *By A. J. Wagner* 30

ABSTRACTS BY THE STAFF:

An Analysis of Some Unit Hot Water Installations 31

Outline of Requirements for a Technical Report 32

Extinction of Gas Flames Through Use of Steam 33
By Jessie S. Yeaw and Louis Shnidman

The Net Consumption of Replacement Appliances 34
By B. Lyman Bell

Some Operating Data on Summer Air Conditioning 35

The Manufacture of Carbon Dioxide from Natural Gas . . . 36
By A. F. Michael

What Does a Sales Manager Expect of Home Service? 39
By F. X. Mettenet

BUTANE-PROPANE NEWS 58

Laboratory Approved Appliances for Liquefied Petroleum Gas Usage 58
By K. R. Knapp

Liquefied Petroleum Gas Association Section Meets at Little Rock 59
By A. Ernest MacGee

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CLEAN GAS MAKES SATISFIED CUSTOMERS

Up go sales, down go service costs when GAS does its job silently, unfailingly. As engineers know, nothing but CLEAN Gas can do that. Especially with modern appliances, their smaller apertures and delicate mechanisms. So follow the lead of Operating Engineers from coast to coast. Take the step that banishes all chance of clogged burners due to fuel . . . equip your plant exclusively with Blaw-Knox Gas Cleaners. You'll find that "as Gas flows, demand grows".

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BLAW-KNOX DIVISION of Blaw-Knox Company · FARMERS BANK BLDG. · PITTSBURGH, PA.

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For a **PERMANENT** *repair*

THE NATIONAL SUPPLY COMPANY

(DAYTON COUPLING DIVISION)

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BUT... DO YOU SELL THE *CLEAN* GAS IT DEMANDS?

Distributing *clean* gas, of uniform quality, is the only *sure* way to keep the users of C. P. Equipment well-satisfied... to keep their appliances operating as they should.

●

You must depend on your manufacturing and purifying equipment to produce the clean, quality gas now demanded. In many cases, this means modernization of and additions to your present facilities.

●

To assist you, Semet-Solvay offers you the benefit of wide experience in designing, fabricating and constructing equipment for the manufacture, cleaning and purification of gas to meet specific requirements.

●

Whenever you are considering changes or additions to your plant, make your problems known to us. Our complete organization is at your service.

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FOR CLEANER GAS

WASHER COOLERS
Remove Tar

MULTIPLE WASHERS
Remove 90% of remaining Tar

NAPHTHALENE SCRUBBERS
Leave less than 4 grains per 100 cu. ft.

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Cool the Gas

and

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FOR LOWER PRODUCTION COSTS AND UNIFORM QUALITY GAS

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NOTHING TAKES THE PLACE OF

CAST IRON PIPE

THE tree from which Newton's apple fell was cut down in 1820. A cast iron underground main, laid in Newton's boyhood(1664) is still rendering satisfactory service. No one will argue the unique necessity of the law of gravity. Few will argue the indispensability of cast iron pipe for underground mains.

If you want proved long life and low maintenance cost that result from effective resistance to corrosion—assured safety margins for impact, beam load and crushing stresses—and permanently tight joints—then you will agree that nothing takes the place of cast iron pipe. Some materials meet some of these requirements but only cast iron pipe meets them all.

CAST Q IRON

Look for the "Q-Check" registered trade mark. Cast iron pipe is made in diameters from 1¼ to 84 inches.

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

Recent installation of mechanical joint cast iron pipe for gas service replacing short-lived substitute material.

THE CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER. 1013 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS

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PENTALARM—because of its great versatility under all working conditions—is the ideal odorizing agent for outdoor leak surveys. PENTALARM'S powerful vapor penetrates wet soil, where other odorants might be absorbed. Another feature of this low water solubility is the fact that PENTALARM'S odor does not linger AFTER the gas leak is stopped.

Two 55-gallon drums of PENTALARM will odorize 1 Billion cu. ft. of gas!

When gas is leaking, PENTALARM is detected promptly, but this penetrating, far-reaching odor LEAVES WITH THE GAS.

SHARPLES TRADE MARK SOLVENTS

For safety's sake,

Pentalarm Your Pipelines

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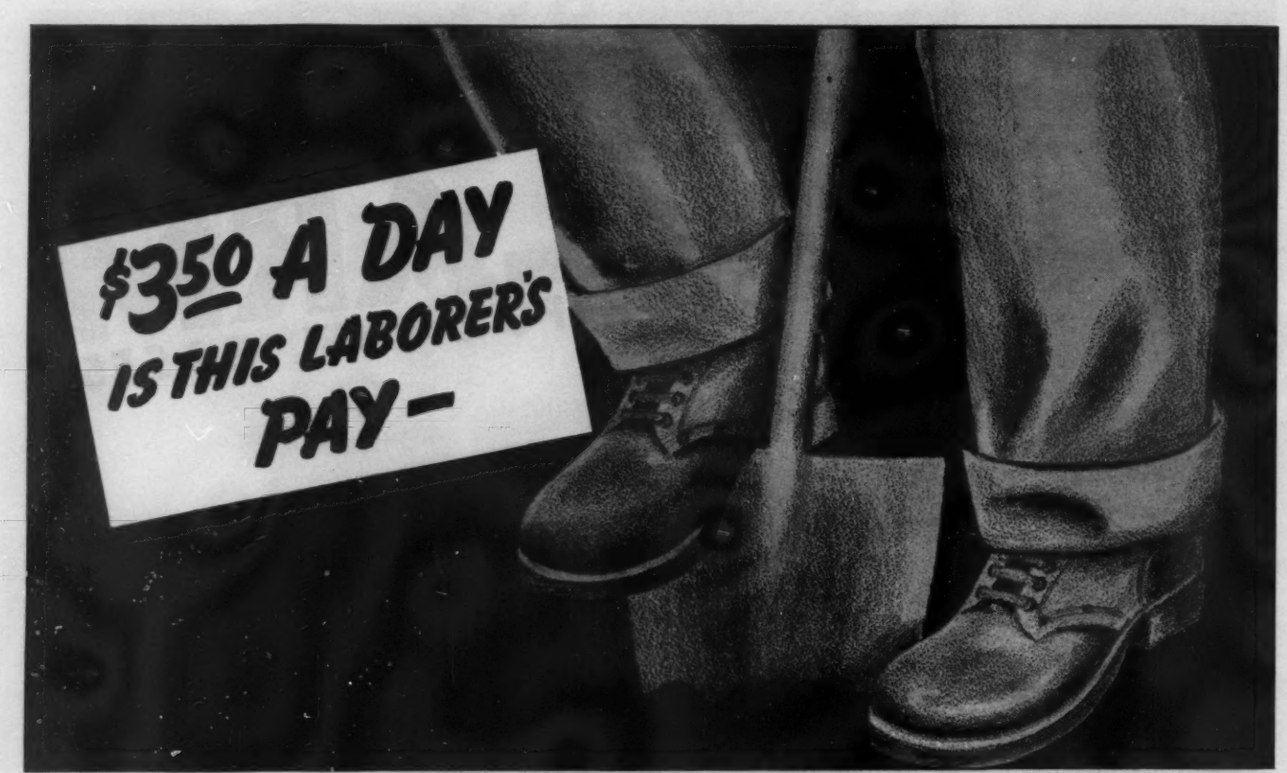
THE SHARPLES SOLVENTS CORP., 23rd and Westmoreland Streets, Philadelphia, Pennsylvania



GAS DEHYDRATION COSTS NO MORE!

The direct operating cost of dehydrating 50,000,000 cubic feet of natural gas is only $3.51 — *or as little as an unskilled laborer's pay for a single day's work!*

This cost is based, not on a hypothetical figure, but on a fact! It is derived from the actual cost of $.0702 for treating one million cubic feet of gas in a dehydrating plant engineered and erected by The Stearns-Roger Manufacturing Co. and Parkhill-Wade for a gas company client.

Yet this plant has far more to recommend it than mere low operating cost. Our client further adds the significant statement that former freeze-ups and low line transmission efficiency problems have been entirely eliminated through this single dehydration plant which protects 1,000 miles of pipe line from the ravages of condensate and hydrate formation!

Ask yourself this simple question — "If I can afford the hire of an unskilled laborer, how much more can I afford no more than his daily pay to clear up my pipe line transmission problems while, *at the same time and at no extra cost* I protect the hundreds of thousands of dollars invested in my line against the corrosive ravages of condensate and hydrates?"

There is but one answer to that question! And while you are still thinking about the matter, may we suggest that you communicate with us for information concerning the solution to your dehydration problem. Without cost or obligation, we will analyze your specific problem and recommend a cycle capable of solving it. A request on your letterhead is all that is necessary. *Dictate your inquiry now!*

PARKHILL-WADE
973 NORTH MAIN STREET
LOS ANGELES CALIFORNIA

AFFILIATED WITH
THE STEARNS-ROGER MANUFACTURING CO.
1720 CALIFORNIA STREET • DENVER, COLO.

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THE precise manufacturing methods that account for such a high standard of perfection in the production of Crane Screwed fittings are your assurance of superior performance—even in Crane fittings for the most common services. For greater piping satisfaction, specify Crane-Equipment throughout, because—in fittings as in valves—

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**Details in folder available upon request.*

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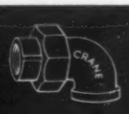
CRANE SCREWED FITTINGS FOR THE GAS INDUSTRY

Crane's line of fittings includes not merely the few hundred types and sizes in most common use, but a total of more than 10,000 separate and distinct items in cast and malleable iron.

ELBOWS—90°, 67½°, 60°, 45°, 30°, 22½°, 11¼°, and 5⅝°, Street, Long Sweep, Side Outlet, Drop, Hub Vent

TEES—Service, Four-Way, Drop Tees, Long Sweep, Double Sweep, Wash Tray

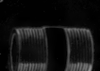
COUPLINGS—Right Hand, Right and Left, Half (Also Wrought Iron), Reducers, Increasers



UNION FITTINGS—Male and Female, 90° and 45° Elbows, Tees with Union on Run or Outlet

BUSHINGS—Outside and Inside Hexagon, Face, Eccentric, Double Tapped

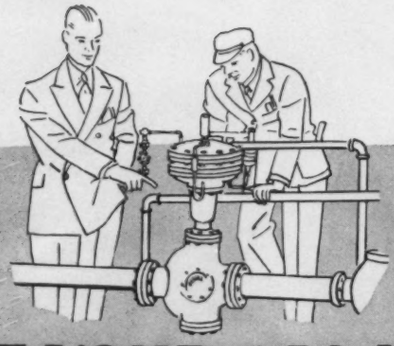
PLUGS—Square Head, Solid, Countersunk, Bar, Barrel



NIPPLES—Close, Short, Long, Tank.

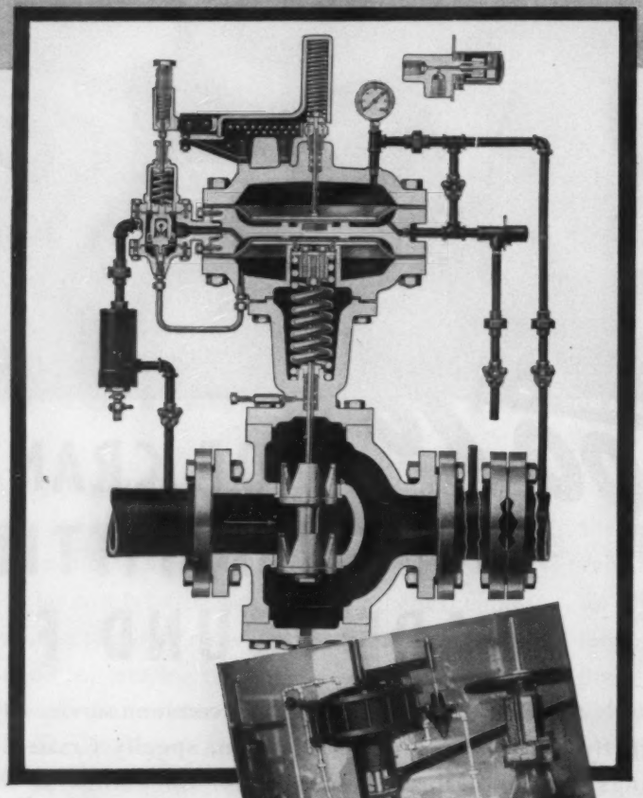
UNIONS—Ground Joint, Gasket Type, Female, Male and Female, Air-Pump

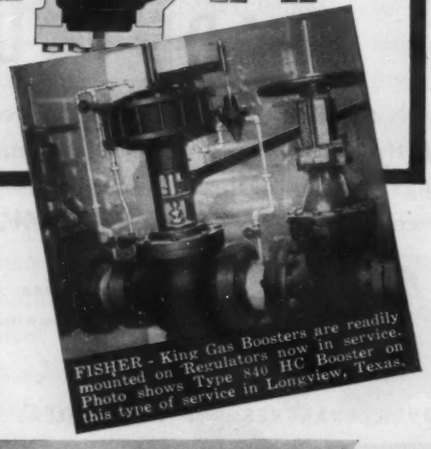
A CRANE FITTING FOR EVERY PURPOSE—The screwed fittings shown above are only a few of the scores of different types and modifications. The complete Crane line includes banded and plain patterns, black or galvanized, in a wide range of straight and reducing sizes; in four pressure classes in malleable iron and five in cast iron.



Now YOU CAN

REDUCE YOUR GAS LEAKAGE 25 to 50%





FISHER - King Gas Boosters are readily mounted on Regulators now in service. Photo shows Type 840 HC Booster on this type of service in Longview, Texas.

ABOVE: Sectional view of Type 840H High Pressure Booster mounted on double ported FISHER valve body which is fitted with full throttling, characterized V-port inner valve having hard seat construction.

FISHER-KING GAS BOOSTER ACCLAIMED THE OUTSTANDING GAS PRESSURE CONTROL DEVELOPMENT DURING PAST 10 YEARS. IT DOES THESE THREE THINGS FOR YOU:

1. *Enables system pressure to be lowered 25% to 50% with corresponding reductions in "unaccounted for" gas.*
2. *Eliminates countless man hours, truck hours, and mileage now devoted to adjusting lever and weight regulators manually.*
3. *Reduces consumer complaints and improves good will because pressures are better regulated according to demand.*

HOW BOOSTER OPERATES

The Type 840 Booster automatically boosts the downstream or reduced pressure in a gas distribution system to correspond with, and counteract exactly the pressure drop caused by friction in the downstream or reduced pressure piping system. Thus, it maintains a constant pressure at the low pressure point in the distribution system, regardless of the demand load. Type 840 can be used for reduced pressures in inches of water column or ounces, but finds its widest use for pounds per square inch pressures with values up to 300 lbs. per sq. in., or higher.

THOROUGHLY TESTED IN THE FIELD

While this is the first time the FISHER-King Gas Booster has been offered to the industry, it has been under actual field development and test since 1932. There are now 157 Boosters operating on all types of gas distribution systems throughout the U. S.

PAYS FOR ITSELF IN 30 TO 60 DAYS

In 149 out of the present 157 FISHER-King Gas Booster installations, this control has actually paid for itself in 30 to 60 days simply by the savings it effected in "unaccounted for" gas.

55 years experience in automatic control equipment qualifies FISHER Engineers to analyze your distribution system thoroughly and to make complete and definite recommendations to effect similar savings for you. Call in a FISHER Sales Engineer today — or, write for new FREE Book that tells complete story of FISHER-King Gas Booster.

Send for FREE BOOK

Contains exhibits of actual Flow Charts before and after Booster was installed in various systems throughout U. S. Interesting colored diagrams show Booster construction and operation. Address Dept. G-119 for your FREE copy.

FISHER GAS REGULATORS are individually built to meet your exact operating conditions

Fisher Sales Engineers in Every Principal City

FISHER GOVERNOR COMPANY

MARSHALLTOWN, IOWA

Reliance Type "H" or "K"
weight loaded

Reliance Type "H" or "K"
spring loaded

STANDARD
In the Gas Industry

The exceptional economy of Reliance Type "H" and "K" Regulators in service lines where dust troubles exist results from the possibility of changing the valve and blowing out the dust without removing the Regulator from the line.

Specially designed toggle action gives a longer and more powerful thrust on the valve seat and makes lower lock-up pressures available.

Type "K" Regulators are similar to Type "H" but are smaller and more compact. Both types are made in spring and weight loaded designs in a full range of sizes, and can be furnished with mercury seal or mechanical relief valves. They will deliver more gas than any others of the same size.

Maximum accessibility with minimum maintenance expense.

Send for Bulletins Nos. 38 and 41

RELIANCE REGULATOR CORPORATION

1000 Meridian Avenue, Alhambra, California

REGULATORS YOU CAN RELY ON — RELIANCE — SINCE 1910 — TRADE MARK

RELIANCE REGULATORS

Saves City from Gas Famine

QUIGLEY SERVICE Helps Put Old Gas Plant in Operation When Flood Deluges Main Works and Hurricane Wrecks Gas Holder.

The September 21st hurricane, flood and tidal wave left a wake of destruction in and around Providence, R. I. No electric power. City isolated. Business suspended. Property damage untold millions.

Quigley Serviceman at Work.

Providence Gas Works' entire 40 acres submerged. Electric generators and motors flooded. Gas holder destroyed. No electricity to run coke ovens. Company fell back on old carburetted water gas plant, kept for stand-by service. Its water gas generators, run only for test purposes a ½ day annually in

Plant of Providence Gas Works as Raging Flood Waters Deluged Yards and Equipment.

Photo by Chas. S. Williams, Jr.

past 10 years, were under water several hours. Fire clay linings and brick bond of water gas sets had loosened up. Sets had to be patched or plant shut down.

Gas company sent out an S. O. S. to Frank M. Leach, Quigley Co's., Pawtucket Manager, to help prevent gas famine for homes and factories of 350,000 people. Leach went to Quigley warehouse. Got enough material to repair the sets. Stuck to the job day and night. In four days he had linings rebuilt to original condition—a task they said was impossible.

By herculean efforts Providence's gas supply was saved!

Only then, with the light of two candles, had Leach time to write his report. (See photo above.) Many dwellings within a block of his home were destroyed.

The Quigley organization has many experienced Service Engineers ready to give practical advice and assistance to industries, that plants may operate efficiently at minimum maintenance cost.

East Providence Gas Holder Destroyed by Hurricane September 21. 1938

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QUIGLEY CO. INC.

56 W. 45th Street, New York, N. Y.

Makers of HYTEMPITE *"The World's Standard High Temperature Cement"* • FIRE BRICK • INSULBRIX • INSULAG • INSULBLOX • INSULCRETE Q-CHROMASTIC • HEARTH-CRETE • CAST-REFRACT • Q-SEAL • TRIPLE-A PROTECTIVE COATINGS • Q-CHROME • DAMIT ACID-PROOF CEMENTS • *ANNITE*

Distributors with Stocks and Service in Important Industrial Centers Throughout the United States, Canada, and in 32 Other Countries.
In Canada, Quigley Company of Canada, Limited, Lachine, P. Q.

☆ Experience ☆
DESIGNS · REYNOLDS · REGULATORS

In 1892, the first Reynolds Regulator was built to fill a specific need of one of the gas companies. This close cooperation has existed down through the years. Hundreds of plant engineers have brought their problems to the Reynolds Engineering Staff and Reynolds has aided in solving their gas control problems.

INTERCHANGEABLE and ACCESSIBLE . . .

In the Industrial Gas Control field a few years ago the users of Regulators talked about making Regulators accessible for cleaning and repairing; also making the working parts interchangeable. Today's industrial regulators by Reynolds solve both problems. Experience, plus the needs of the field, design Reynolds Regulators.

BRANCH OFFICES:

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Kansas City, Mo.

2nd Unit,
Santa Fe Building,
Dallas, Texas.

REPRESENTATIVES:

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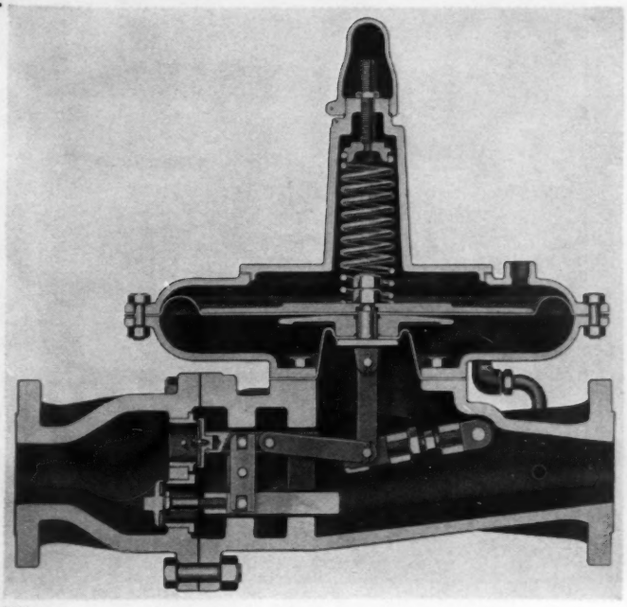
Wm. A. Ehlers,
49 S. Clinton St.,
E. Orange, N. J.



REYNOLDS Toggle Type Regulators for industrial gas control offer these features:

Removable Valve Pocket and Orifices . . . side hand holes . . . streamlining that does not change direction of the flow of gas, increasing capacity and range . . . *pressure reduction from pounds to pounds and pounds to inches W. C. . . . single or double valve construction . . . spring or dead weight type adjustment and equipped with or without pilot control.

*Body of Regulator is so machined that a pounds to pounds diaphragm casing or pounds to inches W. C., diaphragm casing may be used or interchanged.

Recognized Gas Control Since 1892

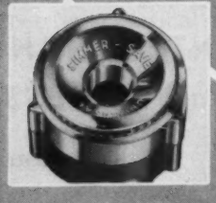
REYNOLDS GAS REGULATOR COMPANY ANDERSON, IND.

UNIVERSAL +

cp

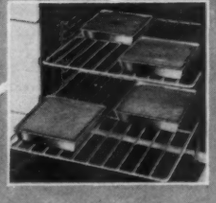
The World's Finest Cooking Appliance!

● A cooking appliance to deserve the name "modern" must excel in all divisions of cooking whether it be broiling, top burner or oven cooking. The Universal, with its advanced devices offers a service in every phase of cookery that actually establishes new and higher standards of cooking performance. Coupled with outstanding service performance, Universal combines smart distinctive styling, finished craftsmanship and outstanding quality of construction. Proof is the essence of any statement, and Cribben and Sexton Company welcomes the opportunity to prove its right to the claim that the Universal Gas Range is the world's finest cooking appliance.



SIMMER-SAVE BURNER with its controlled boiling heat at click of the gas valve is recognized throughout the industry as the finest top burner ever developed.

IN-A-DRAWER BROILER with Savory Smokeless Broiler Grid is without a peer in the realm of cooking appliances insofar as broiling equipment is concerned.



PRECISION OVEN with Low Temperature Precision Oven Burner sets standards of excellence in cooking results and service performance that have never been surpassed by any range ever created. It gives positive, uniform baking temperatures throughout every section of the oven.

UNIVERSAL GAS RANGES

MANUFACTURED BY CRIBBEN & SEXTON CO.,

700 N. SACRAMENTO BLVD., CHICAGO, ILLINOIS

GAS
November 1938

GUEST Editorial

THE WOMAN'S VIEWPOINT

By JESSIE McQUEEN

Home Service Counsellor, American Gas Association

HOW many women employees are there in the gas industry? We know there are 1200 women in home service work alone. As a rough guess, and assuming there are 20 other women in other capacities to every one in home service, it would seem as though there are around 24,000 women actively engaged in the gas business.

Today, all business is very consumer-conscious. Never before have such efforts been made to teach the general consuming public the merits of this or that service or product. Customer education is an important item on the study programs of national women's organizations, consumer councils, women's professional associations and school groups. Requests from such sources pour continually into A.G.A. headquarters, reading "Please send me your publications to be used in consumer education." The real objective of these study programs is "How to buy."

Buying appeals change from year to year as every gas sales executive well knows. We in the industry know that today's gas appliances are of the best quality and that they harness a modern, dependable, speedy and economical fuel. In the domestic field, women are our customers, and it is suggested at this crucial stage in the "Battle of the fuels," that, no matter what their capacity, our 24,000 women employees, through their knowledge of the quirks and foibles of their own sex, are of great potential value. A woman understands how women are constantly swayed by new things . . . . a yearning for change . . . . although, it must be confessed, few of us can figure out what excuse there can possibly be for this year's new hats.

Speaking for the group with which I am most familiar, a recent questionnaire submitted to home service departments in the A.G.A. shows that 2,366,187 women gas customers were reached through home service last year. Since only one half the home service personnel is represented in this figure, we can credit an accomplishment of four million homemakers who received service and instruction on gas service and equipment during 1937. And now that many managements, in their employee study programs, are disseminating the results of these contacts to other employees, the real results are becoming more far-reaching all the time.

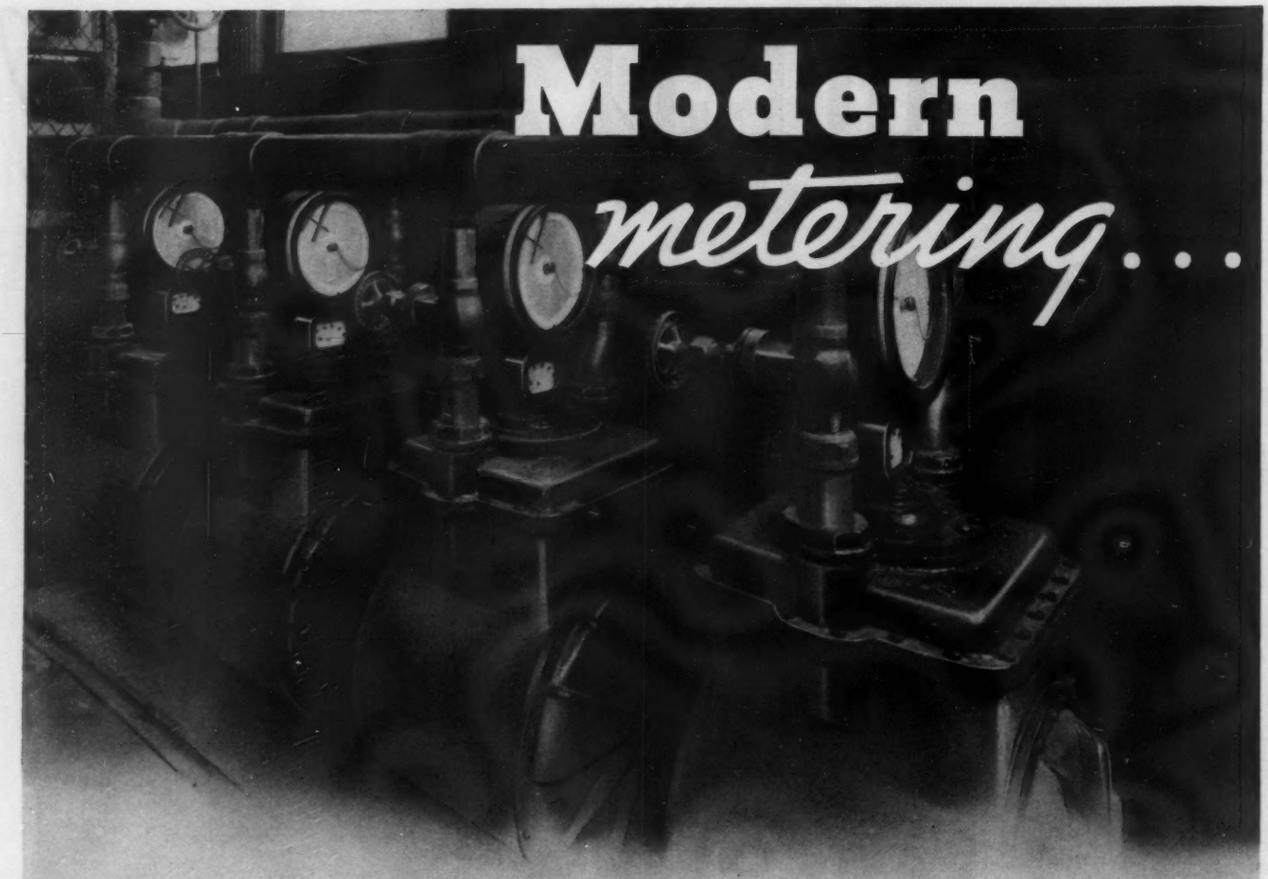
The two major activities of home service are home calls, assisting in the use of gas equipment, and demonstration work. Today, we call the latter an equipment demonstration. Food is prepared to emphasize the features of a gas range or refrigerator, and no opportunities are missed to bring out the value of adequate hot water and the merits of a gas heated home. Women react favorably to this approach when made as part of the demonstration. The efficiency of equipment also interests them, and, since most of them cook with gas, they are glad to learn that it is still the better modern fuel.

To prove that the public appreciates home service, it is interesting to note that our questionnaire shows that over 260,000 customers telephoned home service for information last year. One company executive had the switchboard operator check incoming calls to home service and found as high as 75 a day, and proved for himself the load-building and public relations value of this contact. The information requested, as you might expect, was not only for recipes, menus and party suggestions, but included requests on the operation of special appliances, advice on new equipment to buy, kitchen planning, operating costs and the proper hot water temperatures for laundering fine fabrics.

HOME service, as an organized activity in the gas industry is relatively new, and with its rapid growth, its functions are constantly changing and expanding too. Within the last 10 years, the number of companies using home service has grown from two to five hundred, and home service personnel from 250 to 1,200.

At New Orleans, Mr. Hendee, chairman of the natural gas department said "Our job is a selling job." While home service is primarily an indirect selling job, although getting more sales-slanted all the time, I feel that perhaps the biggest opportunity for our many thousands of women employees in the gas business, lies in advancing the cause of gas service through their club and personal contacts outside, and thereby doing all they can to help sell the industry, in which they are looking for advancement and greater responsibility.

Modern *metering* . . .



BATTERY OF FOUR METRIC IRONCASE METERS installed at the Mueller Brass Company, on the lines of the Detroit Edison Company of Port Huron. The four Ironcase 60-B Type Meters here utilized have a capacity of 950 cu. ft. each per hour at ½" loss, and 2000 cu. ft. each at 2" loss of water.

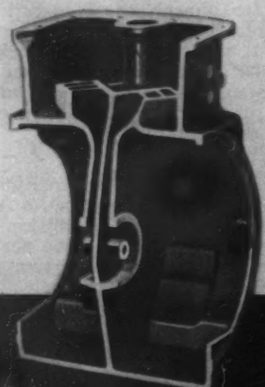
METERS SET UP in parallel, as here shown, offer important advantages in industrial gas measurement. An uninterrupted, complete chart record of the load is insured . . . permitting the proving of meters, one at a time, or even cutting out any meter from the line for overhauling. Each meter is equipped with a Westcott Volume and Pressure Gage, which charts hourly rate of gas flow and pressure.

Metric Ironcase Meters in sizes 5-B to 500-B, include types to meet both the usual and the unusual in service requirements . . . each type designed specifically for the work intended to be performed. The processed one-piece body construction not only brings additional strength, safety and corrosion resistance. It also eliminates internal leaks.

To achieve and MAINTAIN the high Metric standard of accuracy, the friction loss is held to a minimum . . . by valves of perfected design and precision movement . . . improved bearings, lubrication methods and stuffing boxes . . . specially developed diaphragm construction and operation. Metric Ironcase design utilizes the slide valve and full bellows principle . . . your assurance of reliable performance throughout the Metric line.

The operating advantages of Metric Ironcase Meters are detailed in Catalog EG-40 . . . mailed upon your request.

815



One-Piece Body Casting, Eliminating Internal Leaks

Established 1836

AMERICAN METER COMPANY

INCORPORATED

PACIFIC METER WORKS • LOS ANGELES • SAN FRANCISCO

GAS

FOURTEENTH YEAR OF PUBLICATION

THERMALLY *thinking*

By STANLEY JENKS
Editor

Gas Industry Women

There was a time even in my lifetime when it was said dogmatically, "Woman's place is in the home." A noble thought, shall we say, and just let it go at that. A changing world has changed the status of women. The war sent them into many previously exclusive masculine jobs. To "keep the home fires burning," they drove taxicabs and street cars, worked at machines in mills, and with rake and hoe went out into the fields to farm. In fact, they did just about everything, within the limitations of their physique, to release men for military service. They were enfranchised and now today they enjoy both political and legal equality with their menfolk. Business has found a place and a use for their talents, and, I believe sincerely, business has been all the better for their greater participation in it.

In the gas industry we have thousands of women employees. Many of them, let it be conceded, are merely marking time until double harness claims them. It is reasonable to suppose, that thanks to their experience as employees, they will be all the better customers when they cross the dividing line. The employment of women in the gas industry has, therefore, a public relation angle of real importance.

As a great service industry with a base domestic load contingent on our ability to please Mrs. America, it is logical that we should have within our ranks women especially trained in Mrs. America's home-making problems to assist and advise Mrs. America and further the use of gas for cooking. Our current guest editor, Miss Jessie McQueen, home service counsellor of the American Gas Association, is such a woman, and she is a welcome addition to our list of eminent gas executives who have acted in this capacity. Those who know her respect her judgment, her endless capacity for work, and her wholehearted efforts for the betterment of the gas industry. Through her clear the thousands of ideas and problems of home service that inevitably arise in an industry on the offensive like ours. The group she represents on the A.G.A. staff needs no explanation here. But what of the thousands of other women in the gas industry? Stenographers, secretaries, comptometer operators, bookkeepers, clerks and cashiers? How many of them see the gas industry as a lifelong vocation, a career that offers them opportunities galore? Those who do are taking their business careers seriously, doing as the men alongside them are doing, training themselves in the technicalities of the particular phase of the gas industry they are most interested in, and without fear or favor, matching their grey matter and their ability to assume added responsibility like any other individual on the staff. The glamor girls, as such, have no place in this or any other business, except possibly the movies, if they want to climb the ladder of success. It is as individuals, as employees of the gas industry, that women must be content to base their claims for greater recognition. It is to women who are prepared to accept a career in this industry on these terms to which we dedicate our new feature page, "The Woman's Viewpoint." May it prove helpful to such women in increasing their individual value to our industry, in which there always has been and always will be a premium on knowledge and accomplishment.

Gas Scores a Hit

One of our electrical contemporaries is quite perturbed about the advent of the "CP" gas range. Under the heading "Gas Challenges" it gives its own kilowatt coo-cookery boys a good wigging on the dangers of complacency in the face of such a formidable "challenge." "The powerful national and local advertising campaigns which have been launched to put over the 'CP' gas range are strong stuff and will sell quantities of them to housewives who may not be reached by the electric range salesman with his compelling (sic) story," says our contemporary. How true!

I have no intention to disparage the electric range. For many years, I was sales manager of a considerably-sized so-called combination utility company, and I have had plenty of experience with both gas and electric ranges. But let's face the facts. The electric range today exists by grace of the gas companies. Its biggest market has always been where gas service was not available, and with the rapid shrinking of that market in the face of the competition from liquefied petroleum gas companies and their ever-increasing rural gasification, no wonder the electric boys feel like whistling to arouse their courage as they walk through the cemetery. I would be willing to make a modest bet that even in the territory beyond the city gas mains, there were more gas than electric ranges sold during the last two years. Where the electric range has made any progress within the pipe line limits, it has done so, either because a complacent, self-satisfied gas company has allowed

them to get away with it, or a beneficent government has used your money and mine to subsidize electrical power developments, so uneconomical in conception and operation, that they wouldn't exist ten minutes outside the realms of political ownership.

Morse DellPlain, an old boss of mine used to say "You can't buck economic law," and on that score alone, I would be content to rest my case for the "CP" gas range. The electric B.t.u. cannot be generated and transmitted as cheaply as the gas B.t.u. if all cost factors are considered. That is where political competition is so palpably unfair at the present time. But, forgetting the economics, gas has a flexibility and a controllability that electricity as heat cannot duplicate, and which means so much to the housewife who has to use it for cooking. Ask the women who have had experience with both the modern gas and electric range. And to revert for a minute to the economics again, first cost, potential service costs and durability are factors considerably favorable to gas.

All gas has lacked in the past has been the glamor which our electrical friends have been able to wrap around their appliance. That deficiency exists no more now that we have the "CP" range, and with a united industry ardently backing up the national advertising of the A.G.A. and the sales promotional plans of the A.G.A.E.M., there need be no doubt of the outcome of our "challenge." Mrs. America will continue to cook with gas. No fooling.

Our electrical contemporary even brags that we need electrical pilots on our "CP" range. And why not if they work satisfactorily? The biggest manufacturer of electrical equipment in the world makes a line of central heating boilers and furnaces. He uses electrical pilots too, but the fuel that is burned is gas.

Both gas and electricity have a proper place in the scheme of things. As energy, electricity has its place, but as a form of heat for cooking it is a poor second to gas, as every combination gas and electric utility man well knows.

The P.C.G.A. Gold Award

The outstanding paper voted the gold award at the Pacific Coast Gas Association convention at Santa Barbara in September was "The Mechanics of Storage in Natural Gas Transmission Pipe Lines" by Phillip E. Beckman, Pacific Gas and Electric Company. This paper was printed in full in our September issue (p. 39) and from reader response and comment, its popularity in print has duplicated the acclaim it won at the convention. Engineers, with whom I have discussed Mr. Beckman's paper, have been most generous in their praises of this study, which delves into a previously little explored field, and which, accordingly, is a meritorious contribution to the further progress of natural gas transmission technique.

"It is hoped," concludes Mr. Beckman, "that this attempt to express the principles of non-continuous conduit flow will succeed in bringing about a better understanding of transmission line storage, and that it may be of practical use to the gas industry, and that it will stimulate enough interest in the subject to urge others to continue its development."

Mr. Beckman need have no qualms on this score. It will.

Atlantic City

The gas industry, as it boldly proclaimed, "marched on" at Atlantic City, when 2,350 delegates from every state in the Union, Canada, and Great Britain gathered to enjoy the finest program, in my humble opinion, ever presented at an A.G.A. convention. The idea of securing outside speakers wherever possible is commendable, for it brings to us a new viewpoint, a necessity these days, in a world of feverish change.

Mr. McGowen's administration has been an eventful and successful one in the light of what has been accomplished and the groundwork laid for further "marching on." The proposed amendments to the constitution and by-laws of the A.G.A. introduced by Mr. McGowen are needed, and it is hoped they will prove acceptable to the voting membership.

Conrad N. Lauer, president, The Philadelphia Gas Works Co., and new president of the A.G.A., takes the reins at a momentous time in the industry's history and with the best wishes and cordial support, I feel, of all members of the gas industry. May the shadow of his accomplishments never grow less.

Fair Play

Accidents happen in the best regulated families, so they say, and gas heating has had such a mishap in metropolitan New York, where a community development at South Strathmore-at-Manhasset, Long Island, completely heated with gas, gave cause in some instances, for customer dissatisfaction. The gas industry, especially in manufactured gas circles, has built its present heating load on the sound precept of a satisfied customer being the best promoter for more gas home-heating. The New York gas companies have been most punctilious in this respect, and thanks to the witch-hunting proclivities of an oil heat contemporary—what was a mole hill of local significance has been made into a mountain of national consequence. E. L. Stauffer, industrial engineer of the South Carolina Power Company, first called it to my attention, sending me a marked copy of the oil heat publication raising all the fuss. I made inquiries of my own and read all that the oil people had to say on the subject. It sounded far too blatant to be as bad as it was painted. Among other things I found out, was that the gas heating equipment, sold by a distributor direct to the builder, and installed without any supervision by the gas company, was both defective and improperly installed. It wasn't the fuel itself which was at fault. Unfortunately, the innocent customer was the goat, and he had a justified complaint, not against the gas company itself, but against the people responsible for the incorrect installation.

The other side of the picture and the real thoughts of an experienced plumber in this territory, who is an enthusiastic gas heating salesman, have been received unsolicited. I refer to the article in this issue, dealing with this situation, by A. J. Wagner, president of the Association of Licensed Plumbers of Queens County, Inc., and which in a more detailed version first appeared in **The Master Plumber.**

I take this as an example of two things. One, the fuel ally an aggressive master plumber can be, and second, that this battle of the fuels is a bitter one, and that with our superior fuel, our competitors are continually on the alert to find brickbats to throw at us.

A. G. A.'S 20th CONVENTION

Highlighting the Varied Program which Brought 2350 Delegates to the Atlantic City Meeting

By STANLEY JENKS
Editor, G A S

AND so endeth the 20th Annual Convention of the American Gas Association at Atlantic City. The attendance, undoubtedly affected by there being no manufacturers' exhibit, was very good. Total registrations were 2350. GEORGE F. MITCHELL, chairman, and his program committee served up a very interesting program. The general comment one heard in hotel lobbies and rooms was most appreciative. In reflecting the aggressive mood of the gas industry and reviewing future possibilities in terms of past accomplishment, the program "rang the bell."

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MERRILL N. DAVIS, president, A.G.A.E.M.: *"The only factor which can limit the height to which our industry might rise is our ability to successfully educate the fifty or sixty thousand important dealer outlets in our nation to accept, sell and promote the better standard of living which is offered by our fuel through modern and efficient gas appliances."*

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CONRAD N. LAUER, president, The Philadelphia Gas Works, is the new president of the A.G.A., succeeding N. C. McGowen, president, United Gas Pipe Line Co., Houston, Texas. WALTER C. BECKJORD, vice president and general manager, Columbia Gas and Electric Corp., was elected first vice president. J. F. ROONEY, Consolidated Edison Co. of N.Y., was re-elected treasurer.

• • •

J. V. POSTLES, The Philadelphia Gas Works Co., Philadelphia: *"Our steady, regular advancement has been due, in greatest part, to research. If we are to keep abreast of the field and continue to progress, research must be further intensified and even more carefully co-ordinated. If the present methods of manufacturing and practices of distributing our product are to change, surely no one is better equipped to develop these changes than we. If we are on our jobs, we have nothing to fear from outsiders."*

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GEORGE S. HAWLEY, president, The Bridgeport Gas Light Co., was the main speaker at the Industrial Gas Club luncheon. There were 105 present. Mr. Hawley emphasized the importance of industrial sales and how customers have now come to look to gas companies for "honest, fair engineering and fueling service. Even to the extent of recommending other competitive fuels if the case is clear-cut."

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HAROLD F. BROWNE, National Industrial Conference Board, New York: *"Don't be afraid to let employees think. They are going to think anyhow, and it is a lot better to have them think openly than below the surface where the Lord only knows what crazy ideas are finding fertile soil in their minds. Encourage them to think and give them the information that will permit them to reach logical and reasonable conclusions about company and national policy and not only will you build a more intelligent working force but you will also be doing a patriotic duty in building intelligent citizens."*

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CHARLES R. BELLAMY, Columbia Gas and Electric Corp., as chairman of the industrial and commercial air conditioning committee introduced CHARLES L. LEOPOLD, consulting engineer, Philadelphia, at the Industrial Section meeting. Mr. Leopold spoke on "The Relative Importance of Dehumidification and Cooling in Air conditioning."

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N. C. McGOWEN, president A.G.A., and United Gas Pipe Line Co.: *"The outlook is distinctly encouraging in that while our revenues from industrial and commercial sales reflect, in part, only the present industrial slack, our domestic revenues and the total number of customers are increasing despite the difficulties of the times . . . Turning now to the practical side of some of our activities, I need not remind you that notwithstanding the splendid technical skill and resourcefulness of our engineers in the production of any kind of gas, it would be far better that the gas be not produced unless the industry is fortified by and continuously maintains aggressive and progressive sales policies and efforts."*

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The Industrial Section went in for symposiums in a big way, using the entire Wednesday afternoon and Thursday morning sessions for these features. "How far have we gone in modernizing commercial kitchens?" was handled by Leader GEORGE L. CULLEN, Harrisburg Gas Co., (a) Hotels—HUGH L. WALTHEN, Atlantic City Gas Co.; (b) Restaurants—HAROLD HONE, Consolidated Edison Co. of N.Y.; (c) Institutions—GEORGE HENDERSON, American Stove Co. HARRY A. SUTTON, Public Service Electric and Gas Co. led the symposium "Sales features of today's Gas Commercial Cooking Equipment," (a) Ranges—CHARLES F. HENNESS, Public Service Co. of Northern Illinois, (b) Broilers—HARRY M. WOOLMAN, Jersey Central Power and Light Co., (c) Fat friers—JAMES F. PITMAN, J. C. Pitman and Sons, Inc., (d) Miscellaneous—A. O. LEACH, Portland Gas and Coke Co. To conclude, there was a round table discussion on "Expanding markets for commercial gas sales" led by ARTHUR M. APPMAN, Derby Gas and Electric Co., and participated in by HENRY M. BRUNDAGE, Washington Gas Light Co., and CLAUDE A. GATES, Danbury & Bethel Gas and Electric Co.

LAURENCE R. FOOTE, Central Illinois Electric and Gas Co., led the

first symposium on the Thursday morning program entitled "Have we been overlooking opportunities in small industrial uses for gas?" Others participating were (a) Miscellaneous industrial equipment — NELSON R. GORSUCH, Citizens Gas and Coke Utility, (b) Bench and other equipment — CHARLES T. BENNETT, Consumers' Gas Co. of Toronto, and (c) Small industrial equipment — W. WIRT YOUNG, Watertown. The second symposium, "Successful methods for promoting the sale of standardized industrial gas equipment," was led by JOHN H. WARDEN, Oklahoma Natural Gas Corp., (a) Heat treating furnaces—ELMER C. COOK, American Furnace Co., (b) Reel bake ovens—CARLTON W. ROLL, The Brooklyn Union Gas Co., (c) Gas steam boilers—EVERETT E. MAGNUSON, Eclipse Fuel Engineering Co., and (d) A plan for promoting standardized industrial gas equipment sales—R. LOUIS TOWNE, Surface Combustion Corp.

The idea clicked. A variety of ideas were expressed, there was plenty of discussion from the floor, and GENE MILENER is satisfied that it's a fine way to brighten up a program and get everybody participating.

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RAY T. RATLIFFE, advertising manager, Kansas City Gas Co.: *"The only way we can successfully compete with our competitors through advertising is to use the same media that they are using to tell our story of the modern gas range. The national advertising campaign of the gas industry comes much closer in this respect than our local advertising."*

• • •

CARL SORBY, George D. Roper Corp., never fails to turn up with a new and original presentation, and before the commercial section, he again proved he is the gas industry's number one platform impressario. His presentation of the "CP" gas range made a big hit.

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In his paper, "The Susceptible Quotient—End Product of Sales Promotion," H. D. VALENTINE, The Peoples Gas Light and Coke Co., had a new slant on market analysis. The idea is that you divide the actual number of sales made by the number of prospects, who were at the same time in a position to buy, and the result is the "Susceptible Quotient." The quotient is the tip-off to the proper sales promotional treatment, adjusted to each appliance based on its customer acceptibility and past sales history.

CHARLES G. GROFF, chairman of the board, Servel, Inc., and president and chairman of the Electrolux Corp.: *"Experienced, practical and intelligent sales management which can express itself in real and sound permanent specialty salesmanship organization holds the key not only to the successful addition of profitable business, but to the re-establishment of the very valuable public opinion that gas in household service is modern — and upon this I submit the thought that the policies and personnel of the household sales departments are questions of the most vital interest to top management, and are questions which require and demand the unprejudiced approach and consideration by the best minds in the gas industry."*

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The industrial section tried a new stunt called the "Question Box," and devoted the latter part of the Thursday afternoon program to answering and discussing the questions dropped in it during the convention. The replies were given from the platform by such specialists as F. T. BROOKS, Philadelphia Electric Co., DAN BROGAN, the G. S. Blodgett Co., Inc., KARL EMMERLING, Eclipse Fuel Engineering Co., and C. GEORGE SEGELER, A.G.A. staff.

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The special executive luncheon, Thursday afternoon, was presided over by HUGH CUTHRELL, and a live discussion of the merits of the "CP" gas range proved to be the main topic of the meeting. Full management backing, it was urged, should be extended the "CP" range at this time to give the sales promotional program maximum impetus.

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Hon. ALEXANDER M. MAHOOD, president, National Association of Railroad and Utilities Commissioners: *"There should not exist between the utilities and the regulators a feeling of hostility . . . A friendly spirit must exist, and there must be close cooperation between the two. The thought seems sometimes to be held that the effectiveness of regulation is measured by the amount in rate reductions that a commission has been able to bring about through formal hearings or otherwise. This is only part of the story. The public must continue to receive utility service. It will not do without them. To be effective, therefore, in the public interest a commission must not confine itself solely to securing rate reductions. It must be equally concerned that the utilities under its jurisdiction are kept in a position that they can render efficient, continuous, and adequate service at all times."*

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The accounting section split up into luncheon groups, according to regular custom on its Wednesday program. No. 1 luncheon—Customer accounting, presiding R. B. MILNE, Columbia Engineering Corp.; No. 2 luncheon—Customer relations, presiding IRVING K. PECK, Binghamton Gas Works; No. 3 luncheon—Credits and collections, presiding E. N. KELLER, Philadelphia Electric Co.; No. 4 luncheon — General accounting, presiding H. L. DALBECK, Cambridge Gas Light Co.

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The Brooklyn Union Gas Co. has an enviable reputation selling gas water heaters. After seeing the skit "Making a Water Heater Sale," which GEORGE OWENS presented, and employees of the company performed like professionals, it apparently pays to inject a little fun now and then into serious work.

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FRANK M. HOUSTON, Rochester Gas and Electric Corp.: *"With the introduction of the "CP" gas range, we are bringing out a device which is truly in the realms of modern cookery, and have a product whose superiority is such that the electric range people are being forced to compare their range with our "CP" range."*

• • •

The stamina of our home service girls is really amazing. After dancing until the early hours at the president's dance the night before, they were out on parade at the home service breakfast at 8:30 A.M. looking as fresh as the proverbial daisy. By the way, 210 people sat down for breakfast and thereby created a new attendance record. "Madame Chairman" was MILDRED CLARK, Oklahoma Natural Gas Co., and the speakers were GLADYS PRICE, Southern California Gas Co., HELEN SMITH, Rochester Gas and Electric Corp., EDNA MOHR, Pennsylvania Power and Light Corp., PAULINE WATSON, The Gas Service Co., Topeka, and RUTH SOULE, The Brooklyn Union Gas Co. My! How those girls can talk on their feet. And an orchid to JESSIE McQUEEN, A.G.A. staff.

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My big disappointments were two. First, not to see HERB EHRMANN, Consolidated Edison Co. of N.Y., dancing with the doll-like Jessica Dragonette after the recital which the ex-Cities Service radio nightin-

(Turn to Page 24)

(1) HUGH CUTHRELL, GEORGE F. B. OWENS, and E. J. MURPHY, The Brooklyn Union Gas Co., Brooklyn, N. Y. (2) T. J. STRICKLER, Kansas City Gas Co., Kansas City, Mo.; HERMAN RUSSELL, Rochester Gas & Electric Corp., Rochester, N. Y.; ALEXANDER FORWARD, A. G. A., New York City; LYON F. TERRY, Chase National Bank, New York City; N. C. McGOWEN, United Gas Pipeline Co., Shreveport, La. (3) CONRAD N. LAUER, The Philadelphia Gas Works Co. (1939 President, A. G. A.); ALEXANDER FORWARD, managing director, A. G. A.; CLIFFORD E. PAIGE, The Brooklyn Union Gas Co., N. Y.

GAS *Camera* ..... in Atlantic City

(1) ALFRED JOHNSON, Combustion Utilities Co., New York City; R. G. MUNROE, Public Service Co. of Colorado, Denver; JULES D. ROBERTS, Mountain Fuel Supply Co., Salt Lake City, Utah; ARTHUR SENIOR, and J. R. PERSHALL, Public Service Co. of Northern Illinois, Chicago. (2) ARTHUR SKELTON and F. X. METTENET, The Peoples Gas Light & Coke Co., Chicago, Ill. (3) C. A. MILLER, Servel, Inc., Oakland; STANLEY JENKS, editor, G A S, New York City; LOUIS RUTHENBURG, Servel, Inc., Evansville, Ind.; E. V. EKMAN, Servel, Inc., New York City. (4) E. D. ANDERSON and W. H. KUSSMAUL, Northern Indiana Public Service Co., Hammond, Ind. (5) FRANK H. ADAMS, Surface Combustion Corp., Toledo, Ohio; E. R. GUYER, Cribben & Sexton Co., Chicago, Ill., and F. E. SELLMAN, Servel, Inc., New York City. (6) W. J. HARVEY and E. F. WEEKS, Public Service Electric and Gas Co., Newark, N. J.; H. B. YOUNG, Koppers Co., Pittsburgh, Pa.; OTTO REINER, Public Service Electric and Gas Co., Newark, N. J. (7) J. C. SACKMAN and T. J. KELLY, Northern Indiana Public Service Co.

Delegates on Parade

(1) Pacific Coast Gas Association executives: CLIFFORD JOHNSTONE, managing director, San Francisco; Past President JAMES L. STONE, Danbury & Bethel Electric & Gas Co., Danbury, Conn.; President H. L. FARRAR, Coast Counties Gas and Electric Co., San Francisco, Calif.; Past Presidents J. F. POLLARD, Seattle Gas Co., Seattle, Wash., and N. R. McKEE, Southern Counties Gas Co., Los Angeles, Calif.

(2) ROBERT A. KOEHLER and J. P. HANLAN, Public Service Electric & Gas Co., Newark, N. J.

(3) C. H. ZACHRY, Southern Union Gas Co., Dallas, Texas; J. R. COLE, New Mexico Gas Co., Santa Fe, N. M.; F. D. BRADLEY, Southern Union Gas Co., Dallas.

(4) A. J. KERR, Tulsa, Okla., A. E. HIGGINS, and Colonel W. F. ROCKWELL, Pittsburgh, Pa., Pittsburgh Equitable Meter Co.

(5) Front row: JULIAN FOSTER, Lone Star Gas Co., Dallas, Texas; JENNINGS YOUNG, Oklahoma Natural Gas Co., Tulsa, Okla.; R. W. HENDEE, Colorado Interstate Gas Co., Colorado Springs, Colo.; CARL MINNIG, Continental Carbon Co., New York City; ELMER SCHMIDT, Lone Star Gas Co., Dallas, Texas. Back row: F. T. CARPENTER, Philgas, Detroit, Mich.; E. BUDDRUS and A. M. RIPPEL, Phillips Petroleum Co., Bartlesville, Okla.; G. L. BRENNAN, Philgas, Detroit, Mich.

(6) H. CARL WOLFE, Atlanta Gas Light Co., Atlanta, Ga., and DAVIS M. DeBARD, Stone and Webster Service Corp., New York City.

(7) RAY T. RATLIFFE and H. C. PORTER, Kansas City Gas Co., Kansas City, Mo.; B. C. ADAMS, Gas Service Co., Kansas City, Mo.; Major T. J. STRICKLER, Kansas City Gas Co., Kansas City, Mo.

(8) JAMES K. CROWELL, S. R. Dresser Mfg. Co., New York City; FRANK L. CHASE, Lone Star Gas Co., Dallas, Texas.

(9) ALBERT F. JONES, Hope Natural Gas Co., and J. FRENCH ROBINSON, The Peoples Natural Gas Co., Pittsburgh, Pa.

(10) JOE HEDRICK and FLOYD C. BROWN, Natural Gas Pipeline Co. of America, Chicago, Ill.

(11) SIDNEY McINTIRE, F. L. FAIRCHILD, and WARD CHEESEMAN, Sprague Meter Co., Bridgeport, Conn.

Along the Board Walk

(1) HARRY RIEF, D. L. McDONAGLE, RAY COMSTOCK, Montana Power Co., Butte, Mont., and D. D. HOOVER, Bozell & Jacobs, Chicago, Ill.

(2) JOE D. CREVELING and GERARD J. NEUNER, Panhandle Eastern Pipe Line Co., Kansas City, Mo.

(3) HIRAM J. CARSON, Argus Pipe Line Co., Omaha, Neb., and BURT R. BAY, Panhandle Eastern Pipe Line Co., Kansas City, Mo.

(4) VERA L. CORDERY, Public Service Electric & Gas Co., Newark, N. J.; FLORENCE WREN, Public Service Electric & Gas Co., Hackensack, N. J.; BETTY CHINN, Consumers Gas Co. of Toronto, Ont., Canada; PAULINE WATSON, The Gas Service Co., Topeka, Kan.; ELINOR LYNCH, Queens Borough Gas & Electric Co., Far Rockaway, N. Y.; PEGGY ANN GORDON.

(5) CLIFFORD JOHNSTONE, Pacific Coast Gas Association, San Francisco, Calif., and E. HOLLEY POE, Natural Gas Section, A. G. A., New York City.

(6) WILLIAM A. EHLERS, East Orange, N. J., and FLOYD GAUNT, Anderson, Ind., Reynolds Gas Regulator Co.

(7) B. H. GARDNER, Columbia Engineering Corp., Columbus, Ohio, and W. L. HUTCHESON, The Manufacturers Light & Heat Co., Pittsburgh, Pa.

(8) W. J. McLOONE, M. E. EDELL, and G. A. KUNZ, Consolidated Edison Co. of New York, Inc., New York City.

(9) ARTHUR L. SMYLY, Connelly Iron Sponge & Governor Co., Chicago, Ill.; J. P. DARATT, Cincinnati Gas & Electric Co., Ohio; H. G. HORSTMAN, Public Service Co. of Indiana, Indianapolis.

(10) DAN S. KEENAN and SAM MEALS, Carnegie Natural Gas Co., Pittsburgh, Pa.; W. P. HUTCHINSON, Sprague Meter Co., Bridgeport, Conn.

(11) F. R. McMURRAY and A. B. SUTHERLAND, M. B. Skinner Co., South Bend, Ind.

gale gave, and the other was that the program did not permit the repetition of the home service skit which GLADYS PRICE and her girls of the Southern California Gas Co. wrote and presented so successfully at the P.C.G.A. convention at Santa Barbara in September.

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NORMAN R. McKee, vice president, Southern Counties Gas Co., was able to tell his story of the Golden Gate International Exposition in San Francisco before the projector went temperamental. Maybe he wishes he had brought a Hollywood cameraman along.

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Hon. CLYDE H. SEAVEY, acting chairman, Federal Power Commission, Washington, D. C.: *"In all the cases which are pending before the commission, as well as in the promulgation of general rules and regulations applicable to the natural gas industry, the commission intends to proceed carefully and without any desire to bring about overnight any revolutionary changes in the industry. You may be sure that the commission will be fair and impartial in all matters which come before it with a view to meeting its responsibilities to the consuming public and to the industry alike . . . I am sure you will find the Federal Power Commission carrying out its duties under the Natural Gas Act in an altogether fair and unprejudiced manner. If the industry will fulfill its obligations under the Act in the same spirit, immeasurable benefits from the enactment of the Natural Gas Act will follow for the public and industry alike."*

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E. HOLLEY POE, secretary of the natural gas section, seemed to be everywhere, although his section's program was finished after a full day session Monday. The new chairman of the section is THOMAS R. WEYMOUTH, Columbia Gas and Electric Corp., succeeding BOB HENDEE, Colorado Interstate Gas Co.

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Another busy lad was CLIFFORD JOHNSTONE, managing director of the Pacific Coast Gas Association, who made every minute count and covered a lot of territory, meeting old and new friends and conveying the best wishes of the coast group to the national association.

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HUGH CUTHRELL, as chairman of the first session held by the commercial section, took the opportunity to review some of the outstanding accomplishments of the section during the year. Through the appliance planning bureau which conducted the architects and builders contests, 5,300 architects and designers competed and laid the groundwork for 1,100 all-gas homes that are being constructed. The new sales training course was scheduled to begin November 1. When the original course was made available 4,400 gas company salesmen took it. It should have a far greater acceptance on its revised form for it covers far more territory, and it is appearing at a time when the gas industry was never more sales-minded than it is today.

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GEORGE RECTOR, who has been appointed official host for Gas Exhibits, Inc., at the New York World's Fair next year, made his bow at several meetings and parties. He hopes to greet several million gas customers next year, and lend his illustrious endorsement to the superiority of gas for cooking when Mr. and Mrs. America visit the Fair.

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There should be little doubt about the "CP" gas range and its merit as the industry's number one sales weapon, after the send-off and enthusiastic presentation it got from BOB AGEE, sales promotion manager of A.G.A.E.M., who literally "wowed" the convention as he demonstrated dramatically the dangerous complacency of allowing nine million obsolete gas ranges to drive women away from gas or to other less desirable fuels, for want of a modern, up-to-the-minute completely automatic gas range, which like the automatic refrigerator, saves more than it costs to own it.

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It must have been an eye-opener to many who heard DR. J. BRIAN EBY, geologist, Houston, Texas, as he explained the geophysical methods now used in exploring for oil. There seems little haphazard about it these days, and, of course, with future reserves and conservation so much to the fore, we in the gas industry more than enjoyed his interesting and excellently presented coverage of what could so easily have been a sequence of bewildering technicalities.

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E. F. SCHMIDT, Lone Star Gas Co.: *"The remedy for this waste (natural gas blown in the air) lies in the returning of the gas to the reservoir until it is utilized. It has been definitely shown that the major portion of the gas reserves which are found in contact with oil can be saved for commercial consumption, and likewise the oil recoveries can be materially increased by means of procedures in operations which return the gas to the reservoir."*

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It was a good idea of the eastern section of the Liquefied Petroleum Gas Association to hold a meeting and have a luncheon for its members at Atlantic City during the convention. I counted 36 present and it speaks well for the enthusiasm of those present that they gave their time and much expense to be present. A. J. MALONEY, Washington Gas Light Co., was the guest speaker at the luncheon. He spoke about the value of the bottled gas industry as an ally of the gas utilities.

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F. X. METTENET, The Peoples Gas Light and Coke Co., Chicago, and DAVIS M. DEBARD, Stone and Webster Service Corp., are the new chairman and vice chairman respectively of the commercial section.

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BERNARD T. FRANCK, Michigan Consolidated Gas Co., before the Technical section: *"We are faced with the realization that even a broad interpretation of 'all profits are made in the retort house' is at its best only a half truth. There is no more discouraging and demoralizing sight in the gas industry than the operator who, in face of declining gross revenues, hopes to find salvation for his company solely by chiseling a few mills per M from his operating costs. Under such circumstances, it will take nothing less than a miracle to save his business.*

"The point is that 'sales' are at least as important as operating economics; and, to make sales you usually have to spend money. It is not so much a question of 'to spend or not to spend' as it is a matter of spending wisely."

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Colonel WILLARD CHEVALIER, publisher of *Business Week*, at the final general session spoke on "National Advertising." He urged the gas industry to make the most of its splendid national advertising campaign, by following through and giving it a local interpretation.

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FLOYD L. CARLISLE, chairman of the boards of the Consolidated Edison Co. of New York and the Niagara-Hudson Power Co.: *"The principal difficulty that the gas industry has encountered has been the tremendous increase in its taxes. More and more, it is being recognized that in our national economy, taxation must be*

adapted to the particular business on which it is imposed and that where taxes produce a decrease in volume and turnover, the result is healthy to neither the industry nor to the whole national prosperity."

Mr. Carlisle praised the enterprise of Gas Exhibits, Inc., as being the first industry at the New York World's Fair to sign up for space and stated the gas industry's exhibit will include the "largest gas flame ever created by man."

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GLADYS PRICE, Southern California Gas Co., succeeds MILDRED CLARK, Oklahoma Natural Gas Co., as chairman of the Home Service committee.

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"Wife insurance" in the form of a regular policy, and issued by the A.G.A.E.M. individually to all delegates, scored a big hit in focusing the convention's attention on the merits of the "CP" gas range.

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G. E. GRIMSHAW, Johns Manville Corp.: *"In the past 25 years the developments in the design and operation of furnaces and ovens have advanced at a rate not easy for the manufacturers of insulating and refractory materials to keep up with. Prior to that time . . . often one insulating material was pressed into service for a number of varied conditions where today it has been found necessary to design several to give maximum in performance and service. Insulating materials were not available for resisting temperatures over 1,300° F. whereas today 3,000° F. is not the temperature limit for successfully using some insulating refractories. Materials have been produced to withstand both heat and moisture or retard corrosion . . . The manufacturer today has an unlimited number of insulating materials from which to select one or several that will give satisfactory service to the extent of the best performance at an acceptable cost."*

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LAURENCE E. BIEMILLER, Consolidated Gas, Electric Light and Power Co. read the paper, "Holding the Pressing Machine on Gas," by CHARLES C. KRAUSSE of the same company, given at the industrial gas session, Tuesday afternoon.

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Congratulations are certainly due the Industrial and Commercial air conditioning committee, chairman, CHARLES R. BELLAMY, Columbia Gas and Electric Corp., on the completeness of its report, in which articles of high technical merit are included by JOHN deB. SHEPARD, Consolidated Gas, Electric Light and Power Co. of Baltimore; KENDALL H. CASTLE, Rochester Gas and Electric Corp.; W. F. FRIEND, Ebasco Services, Inc.; LEON OURUSOFF, Washington Gas Light Co.; CHARLES S. LEOPOLD, Philadelphia: JAMES C. PATTERSON, Carrier Corp.: CHARLES FENDALL CUSHING, The Bryant Heater Co.; F. M. JOHNSON, Surface Combustion Corp.

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H. A. EHRMANN, Consolidated Edison Co. of N.Y., was elected chairman of the Accounting Section, succeeding D. H. MITCHELL, Northern Indiana Public Service Co.

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JOSEPH E. POGUE, The Chase National Bank, New York: *"The known proven reserves of natural gas in the United States are believed by the best authorities to be in the neighborhood of 60 to 75 trillion cu. ft., or say, 25 to 30 years' supply at the current rate of consumption. Even with this backlog, however, the continued discovery of new reserves is a fundamental requirement of the industry. That such extensions of the known supply are possible for a sustained period is beyond reasonable question, for even were the incentive lacking in respect to gas, the active exploration for petroleum is bound to continue to uncover enormous gas potentialities."*

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The weather was conceded by the California delegates to be even worthy of their state. It was perfect. There was a premium on their "thirty-bucks-every-Thursday money."

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The convention will be held next year in New York City during the week of October 9. F. F. SCHAUR, Equitable Gas Co., reported for the Time and Place committee.

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During the President's dinner of the A.G.A.E.M., the light (electric) failed. A hastily improvised glee club among the guests found solace in song as waiters rushed around fixing up candles until the lights were restored.

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J. S. SPAULDING, Southern California Gas Co., stressing the position that the gas industry rates in American business today, showed that our capital investment of approximately $5,000,000,000 is even greater than that of the steel industry with its $4,200,000,000 investment.

MRS. WILLIAM DICK SPORSBURG, Port Chester, N.Y., chairman of the legislation department, General Federation of Women's Clubs: *"Put women on your boards of directors—but only those as well qualified as men . . . Insist on no new taxes and women will back you up. We are making a drive to smoke out hidden taxes, the 53 taxes hidden in a loaf of bread. Ten million women are organized and business and legislators will have to listen."*

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FRANK H. TREMBLY, JR., Philadelphia Gas Works, is the new chairman of the Industrial Gas Section. He takes the place of HALE A. CLARK, Michigan Consolidated Gas Co.

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J. V. POSTLES, Philadelphia Gas Works, handed over the chairmanship of the Technical Section to F. M. GOODWIN, Boston Consolidated Gas Co.

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GORDON KING of the A.G.A. staff is an ardent photographer. He had to be to cover the convention as he did, hauling around with him his camera and special flashlight equipment.

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Three executives of the Columbia Gas and Electric Corp. were elected to office in the A.G.A. WALTER C. BECKJORD, vice president and general manager, was elected first vice president; THOMAS R. WEYMOUTH, vice president, became chairman of the Natural Gas Section; and FRANCIS B. FLAHIVE, comptroller, was elected vice chairman of the Accounting Section.

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Association awards were made as follows:

Meritous Service Medal—JOHN N. HOLOUBEK, Consolidated Edison Co. of New York, for his outstanding bravery and quickness of judgment in preventing a serious explosion at the Astoria gas plant.

Charles A. Munroe Award—HOWELL C. COOPER, president, Hope Natural Gas Co., Pittsburgh, Pa., for distinguished work as chairman of the Main Technical and Research Committee of the Natural Gas Department.

Beal Award—A. M. BEEBEE, Rochester Gas and Electric Corp., for his paper, "Time Marches On—Where is Manufactured Gas Marching," which was judged the best paper presented before the A.G.A. Technical Section meetings during the year.

The last joint in a day's work on the Cement field line. The pipe is fitted with a Dresser coupling and bull plug for testing next day before it is lowered into the ditch.

Building The Oklahoma Natural Gas Co's. New Cement Field Pipe Line

By J. C. ALBRIGHT Staff Correspondent

AFTER gas had been discovered in large quantities in deep wells drilled west of the village of Cement, Caddo County, Okla., which field established a great reserve to draw upon, Oklahoma Natural Gas Co. in February, 1938, began construction of 15 miles of 12-in. transmission pipe line to deliver this fuel into such industrial and domestic centers as Oklahoma City and Tulsa. This line has its eastern terminal south of Chickasha, Okla., where it ties into existing facilities and runs in a westerly direction through the old shallow oil field at Cement, and traverses a variety of terrain, including deep sandy soil, and high rocky promontories of the uplift where the new field west of Cement is located.

The line was built to take advantage of supplies of sweet gas to augment existing sources, so that Oklahoma Natural Gas Co. might better supply both industrial and domestic customers during winter peaks. The line was completed August 12, 1938. Gas was first taken from these wells in the west extension of the Cement field in September.

The pipe which is used for this transmission line is salvaged from a system no longer needed, and, to save handling, is trucked from a point in Kansas and strung along the right-of-way as the trucks are unloaded. The line was originally welded where it saw previous service, and some welds were not of the quality that Oklahoma Natural Gas Co. requires for its pipe line system. To test the old welds, where pipe is hauled in double joints, each section is dropped from the staked bodies and allowed to strike the ground with as much force as possible. If the weld connecting the two joints is not of sufficient quality, it shows some indication of break-down, and when this occurs, the old weld is cut out and a new one made to join the pipe.

The system in use for laying the line is a combination of welds and Dresser couplings. Approximately 200 ft. of pipe are welded, then connected to the next 200 ft. with a Dresser sleeve. Stovepiping is practiced on this line, with tackers ahead to join the joints making up the section. About 4,000 lineal ft. of pipe are connected each day with this program, employing three welding machines and the tacking unit, together with a utility unit that is used for cutting sections of welds from the line for test coupons and to make up finishing connections as the line is laid in the ditch.

As a large portion of the right-of-way is over sandy ground, a machine ditcher makes the excavation far ahead of the pipe line crews, and approximately four miles only of the line will cross hard ground where blasting is required. The country covered is generally rolling, crossing many hills of varying height and steepness of sides, with innumerable creeks, gullies and small dry streams along the way. The pipe line tied together during the day's welding is laid upon skids above the ditch, and left in this position until night-fall. The amount completed the previous day is still above ground, and is tested for leaks. A portable compressor, used for this work, is connected to a special bull plug at one end of the completed section, which is attached to the line with a Dresser Coupling, and which has nipples for air introduction, and for letting off pressure after tests are complete. All welds, wrinkle bends and Dresser sleeves are soaped carefully while the line is under air pressure, two men inspecting the line and marking spots requiring re-welding or spotting to seal the leak.

Where the pipe breaks over the rim of gullies or creeks or crosses the lowest part of creeks and other depressions, wrinkle bends are made. Acetylene torches are used for this work, heating the pipe to the required temperature locally for the bend to be made. One or more wrinkle bends are put into the line as the case may be, and after cooling and testing the heated part is painted with the usual type of pipe line primer.

The type of soil in which the line is laid through Caddo and Grady counties contains few, if any, hot spots, and the line is covered with no other dressing than the originally applied when the pipe was in service in gas transmission in Kansas. All fresh welds and Dresser sleeves, which occupy little of the total surface of the line, are coated with pipe line primer, which work requires little time.

Each welder, before being regularly employed, is taken to the Oklahoma Natural Gas Co. shops in the field not far distant from the line, given an electric machine and told to select nipples for the weld. After completion, the section is cut apart for inspection and for test coupons. The coupons are placed in test machines for breaking strain, and if found acceptable, the welder is put to work. The contracting company, White Deer Construction Co., accepts the workman on the company's finding, and he is given full welding time.

However, the test engineer for O.N.G. Co., follows this man, as well as others on the job, and occasionally marks a weld at random, and without inspection requires that it be cut from the pipe for thorough tests. If a weld does not meet requirements of the company, the welder himself is fully responsible, and is immediately transferred from the job. Consequently, the welder does his utmost to make a satisfactory weld.

Oklahoma Natural, in laying this line, uses teams and "skinners" to transport welding machines, which are mounted on ordinary wagons. The main reason for this type of welding machine transportation is that growing crops of farmers will be damaged less than with trucks, and the goodwill of country folk is desired, and their property respected. Consequently, little difficulty is encountered along its right-of-way, and assistance is easily obtained in reporting leaks and damages to pipe lines and equipment.

As this line is laid during the hottest part of the day, maximum expansion of the pipe occurs, which jams each sleeve joint tightly against the next. Left on skids while welding and coupling, and throughout the following day, ample opportunity is available for complete inspection. After testing, spotting and so on, the line is checked the following morning while in its maximum contraction, when all high points are lowered into the ditch. Sags come next, with comparatively level sections still resting upon the skids. The disconnected ends, with sufficient pipe allowed for contraction during the night, are "Dressered-up" by cutting to fit, or, if contraction gaps the line, a short nipple is welded in to close the line. By lowering the comparatively level sections following the high points and sags, the pipe is compressed in the ditch, with sufficient slack thrown back into it to accommodate changes due to weather conditions, and covered immediately.

Inside beads are used in the welds of the line, accomplished by the welder wiping his electrode along the bevel as he lays on metal. Sometimes the weld is washed in, but the most successful welder finishes the weld with a flat outside bead, uniform in texture and appearing as if it were part of the pipe proper.

Upon being connected to wells, separators and reducing stations in the gas field, the transmission system will have a rated capacity of about 50,000,000 cu.ft., all of which, in varying

(Continued on Page 70)

AT LEFT: Dresser coupling on Oklahoma Natural's 12½-in. line to the Cement field, Okla. The couplings were used at 200-ft. intervals with welds between. CENTER: Wrinkle bend in the Cement field line. Such bends were made as overbends and in sags. RIGHT: A weld on the line. Coupons taken from such welds withstood pull of over 55,000 lbs. pressure.

AT LEFT: Blooded stallions, hitched in pairs, were used to haul equipment along Oklahoma Natural Gas Co.'s Cement field line. AT RIGHT: Point on the line where tests were made. Allowance is made for contraction of hot pipe for final coupling next morning when pipe has cooled.

This Job of Selling Gas

What Has Been Done; What is Being Done; What Can Be Done Cooperatively to Boost Future Sales

By MERRILL N. DAVIS

President, Association of Gas Appliance and Equipment Manufacturers

WHILE I feel that as a figure of speech the words "pump priming" have been terribly abused, yet I think that in its true sense pump priming is just what we need to do in the gas industry. We must strengthen our own pulse and draw food into our life's stream from every source. For example, we might benefit from our present apparent national adversities by realizing more gas sales and load increases from the United States Housing program in this current national spending spree. Eight hundred million dollars have been appropriated for use of American cities in their participation in the Federal Government Long-Range, Slum-Clearance, and Low-Rent Housing program. Already, about $600,000,000 have been ear-marked for specific housing projects.

M. N. DAVIS

Housing Opportunities

Local housing authorities in about 150 American cities and towns have received commitments from the United States Housing Authority to date. Therefore, right at this minute there are 150 opportunities for that many gas companies to join hands with the manufacturers of gas ranges, refrigerators, water heaters and house-heating equipment for immediate sales results. In such low-cost housing projects, gas and gas equipment have an outstanding advantage due to the lowest first cost of our equipment, the lowest installation cost, the lowest maintenance cost, and the lowest operating cost. These advantages are acknowledged by prominent government officials. While proper exploitation of these points plus our superior service has helped us to gain the load in a large proportion of these projects, yet in spite of these advantages, we have lost out in a number of similar and recent nationally important projects. Regardless of whether or not he favors these national spending programs, it behooves every man in our business to make the most of them.

Our success or our failure in getting gas and gas appliances into all of these projects will very materially affect the future of our business. If we succeed, the community as a whole will be impressed by the thought that gas was selected for such a project because of its modernity and economy. On the other hand, if electricity were adopted for those services commonly performed by gas, the idea is bound to prevail among our old customers and subsequent or potential consumers in the community that gas is old-fashioned, uneconomical, etc. Therefore, I believe that even at the sacrifice of immediate profits on either the appliances or the service, it is imperative that we see to it that gas is used for cooking, water heating, refrigeration, and house-heating. For these very reasons, we may expect our competition to go to almost any expense to gain the acceptance of their product. The manufacturers of gas appliances and equipment are fully appreciative of this phase of the situation and are willing to fully cooperate with the gas company in such an undertaking.

"Fair-weather management" is easy, but it takes real ability and courage to conduct intelligently and successfully a business under present economic conditions. I am glad to say, however, that it can be and is being done right now in our own industry on many fronts.

For example, it took courage for the Gas Water Heater Division to launch a $100,000 Prize Parade at the beginning of this year immediately following the 1937 fall slump in sales. The rather remarkable results, however, more than justified the undertaking. For instance, the campaign was self-supporting, and, with 1,200,000 more gas meters registered in the campaign in excess of the number registered in any previous campaign and with water-heater sales for the first eight months of 1938 eight per cent better than those of any other major appliance, the value of such aggressive sales effort is readily discernible.

Courageous Campaigns

It took courage in these trying times for Servel to launch one of the most comprehensive five-months campaigns in its history under the appropriate and timely slogan of "Every Minute Counts." More than 600 utilities in all parts of the United States participated in the campaign, and in spite of adverse conditions, the utility company's gas refrigerator sales maintained a satisfactory level.

In the face of a decline of gas range sales for the first half of 1938, it took courage when the range manufacturers answered the gas companies' requests for the "CP" gas range. This project involved the investment of hundreds of thousands of dollars in retooling factories, but I feel that ample justification is furnished by the following facts:

1. The gas industry now has an appliance which best utilizes our fuel and properly interprets the advantages of gas over competitive fuels.

2. Nearly 3,000,000 promotional pieces and items have been purchased from the A.G.A.E.M. plan-book for localized promotions of "CP" gas ranges.

3. Nearly 300 gas companies have already launched campaigns for the

promotion of this crowning achievement.

4. Enthusiastic consumer acceptance of "CP" models indicates that gas ranges will be one of the first major appliances to pull itself out of the present sales slump.

It took courage for our house heating equipment manufacturers to launch their individual campaigns and promotions for the furtherance of that national trend to gas for house heating so that every utility is now justified in continuing to publicize "Join the Swing to Gas." The origin and support of this fitting slogan by gas companies in spite of adverse economic conditions was courageous and its effect has been most encouraging.

It took courage for gas companies to renew or continue their national magazine advertising programs in the face of declining domestic sales, but the recent leveling off of these formerly declining gas sales curves indicates that this vast program surely justifies the required expenditure of time, money and effort.

It has taken courage for our gas appliance and equipment manufacturers and utilities under present economic conditions to contemplate the expenditure of more than a million dollars for participation in the New York 1939 World's Fair. The advance publicity the industry is receiving upon the aggressiveness displayed by this action is of great value. The advantages secured over competition by this united cooperative effort is a stimulant to the morale of the industry.

From the manufacturer's viewpoint progress may be accomplished by continued cooperative sales efforts as outlined above.

Dealer Sales Education

Everywhere I hear pleas from association members for more consumer education on our products and service through the medium of additional sales outlets. By this they do not mean gas company employees or large utility sales forces, but that we should aggressively endeavor to enlist to our cause all or a large part of the 50,000 department and furniture stores and hardware and specialty appliance dealers. Remember these establishments are daily becoming more electric minded through the persistent sales training efforts of large electrical appliance manufacturers which is making them competitors of the gas industry. The fact that no manufacturer of gas equipment is as large nor as well equipped to compete on a national scale may or may not be the manufacturer's fault, but the fact remains that such is the case. Therefore, it behooves us to remedy this condition as rapidly as possible by having our combined industry, both utilities and manufacturers, become even more retail-dealer minded than the combined electric industry.

I think that the industry should recognize at once that there are definitely two distinct types of retail appliance dealers. One group is the "basement appliance dealers" consisting of plumbers and heating contractors. They definitely are an asset to the industry because of their ability to sell water-heating and house-heating equipment. With this group, I feel that the industry has practically reached the correct solution for cooperation. There is still some room for improvement and we are rapidly ironing out our small differences. In Major Forward's recent paper entitled "Getting Together for Sales" which he delivered in February of this year before a master plumbers' association, he stated, "During the years since May 2, 1931, there has come to the A.G.A. no suggestion for any change in the agreement then entered into with enthusiasm and good faith. Recent consideration indicates that the principles then laid down and agreed to are just as good in 1938." I agree with Major Forward and would urge those utilities and manufacturers who have not yet adopted those principles referred to for cooperation with plumbers and heating contractors, to reconsider and do so as a means of increasing their sales of water-heating and house-heating equipment. Briefly, those principles referred to are:

1. Cooperate with dealers only on the sale of approved quality merchandise.

2. Sell no equipment not directly related to the use of gas.

3. No premiums or allowances should be made on merchandise with which all cooperating agencies may not participate in consistency with present-day, good merchandising practices.

4. Utilities should engage in "promotional activities" instead of consistent merchandising efforts only on those appliances not yet having public acceptance.

5. Coordinated advertising programs should be developed.

6. Maintain "deferred payment plans" only on an economically sound basis.

There are about 30,000 plumbing and heating contractors to whom this type of cooperation should be extended. To attempt to compete with them instead of enlisting them as supporters of our cause is, to my mind, sheer folly and will eventually lead to defeat. To my mind our combined failure to more fully enlist this army by follow-through with those established cooperative principles more enthusiastically, is the principal reason why unsound summer-winter-hookups for oil-burning equipment are increasing in popularity.

PRESENTED ON THESE pages is the major portion of a paper, "The Manufacturer's Viewpoint," which was presented by Mr. Davis before the General Sessions at the 20th Annual Convention of the American Gas Association, Atlantic City, New Jersey, October 11, 1938.—Editor.

One Most Important Group

But now I come to that other group of dealers made up of department, furniture and hardware stores, radio and specialty appliance dealers. This is the group that so materially affects our important kitchen load and with whom we have not fared so well. We all recognize and are concerned with the fact that our domestic load is declining and that the ratio of gas-to electric-range sales has decreased from from 10 gas-range sales to one electric-range sale in 1933 to as little as four gas-range sales to one electric in the last year. While we consider electric ranges to be still in the promotional stage, over one-half of the electric ranges sold last year were sold by dealers. In other words, here we talk about the 16,000,000 customers now cooking with gas and admit and boast that ours is the ideal and accepted fuel, yet we have dealers selling no greater percentage of our heat-controlled ranges than they are selling of fully equipped electric ranges during the infant stage of public acceptance of that appliance. A recent survey discloses that out of 19,000 department store and appliance dealers, exclusive of plumbing and heating contractors, 13,000 of them are now handling electric ranges. This shows how our competitors have taken advantage of sales opportunities offered by this class of

(Continued on Page 68)

In Justice to Gas Heating

By A. J. WAGNER

President, Association of Licensed Plumbers of Queens County, Inc., N. Y.

IN a recent article, published in a magazine catering to the oil heat industry, particular mention was made of the excessive cost of heating with gas. It was reported that gas consumption for heating homes was so high that many owners are being compelled to remove the appliances and are considering oil heat, or have already installed oil heat.

A. J. WAGNER

This publication has taken a remote community outside the boundary limits of New York City as "Test Case." It seems that a few dissatisfied users of gas heat, who probably had a grudge against the builder for some reason or the other, blew up and made a mountain out of a mole hill. Naturally, the oil industry, just itching for several years to get something on gas heat, which has dug so deeply into the oil business, added more dirt to the mountain and made unfair comparisons.

We understand from reliable information that of the 97 gas units the builder installed only 18 were removed. Furthermore, the homes being built right now in the same community, by the same builders, are being equipped with gas heating appliances.

I can visualize those unfortunates, who have made the change to oil heat, in a few years cursing the one responsible for all the trouble they are encountering. I say in a few years because after that period of time their oil equipment will begin to wear and give trouble, necessitating expense. Their homes will need redecorating, and the smudge of oil will be readily noticeable on neighbors' property. When all the oil burners in the whole development will likely be being used for bullets to kill some Chinese, the gas burners will be still operating and giving 100 per cent satisfaction.

Had these homes been constructed in Queens or Kings County, I doubt whether anyone would have been so misled as to remove his gas burner.

I do not believe that these jobs were installed according to the best heating practise. They were sold by a manufacturer's distributor who has since given up or lost the distributorship and, most naturally, ceased responsibility. Gas users received no service from this distributor. The local gas company and the equipment manufacturers both disclaimed any responsibility since neither of them had been responsible for the installations. The poor home owner held the bag.

From photographs printed in this particular publication, showing the gas installation, it appears that not even a header, equalizer, or bleeder was installed on the boilers. The photographs of the oil fired jobs, however, show these headers, etc. The publication even admits that the systems originally were not properly flushed and that they primed excessively. It was further found that natural gas burners were being used instead of manufactured gas burners, which plainly proves why some of these jobs ran higher than estimates if such estimates were rendered and, if so, properly made. Had the installations been made as gas units should be installed, properly cleaned, with the correct type of burners and correct surveys, this article would not have been necessary as gas consumption would have been 25 to 30 per cent less.

The oil industry has been very badly bitten by the gas burners . . . It has seen the handwriting on the wall and is now, like a drowning man, clutching at a straw. They pick this community where a high gas rate exists to bolster up the spirits of their dealers. The "Swing to Gas" has upset them completely. No doubt you have seen publicity such as "The oil burner that burns like Gas" . . . or the "Oil burner with the blue flame, no dirt, no soot, etc." These slogans admit the oil burner's faults, and the perfection of gas as a fuel.

I believe the article, on which my comments are given, is absolutely unfair and unjust, especially so when it openly warns other people to stay away from "Gas Heat." To me its writer doesn't know what he is talking about in giving this warning. The article in itself will most likely act as a boomerang to the oil burner industry as it pretends to show that gas heat is too expensive for users "wherever they may live." This is contrary to facts. I have installed oil burners and will continue to do so in isolated cases, such as in sections where no gas mains exist or where a high gas rate still prevails, as I believe that oil, though inferior to gas, is a better fuel than coal.

Let us look at the unfairness of the article as it pertains to the plumbing trade. Permit me to explain briefly the procedure of a gas installation in Brooklyn and Queens. Had the jobs in question been installed and handled in the manner we are forced to install them there would be a different story.

A survey must be made either by the contractor or representative of The Brooklyn Union Gas Co. This survey is made according to the B.t.u. method, with factors and procedure of figuring supplied by the gas company. Periodical school sessions are held by The Brooklyn Union Gas Co. where all plumbers, their journeymen and salesmen are educated in the method of making these surveys. These surveys show a drawing of the building to scale, ceiling heights, glass surface, roof surface, floor surface, cubical contents, type of construction, size of boiler, size of radiators, etc. When this is done, the factors are employed and the balance is a case of division and multiplication. This survey is submitted to The Brooklyn Union Gas Co. where

(Continued on Page 64)

An Analysis of Some Unit Hot Water Installations

● **REPORT OF THE American Gas Association Volume Water Heating Committee, LAWRENCE E. BIEMILLER, Consolidated Gas, Electric Light & Power Co. of Baltimore, Baltimore, Md., chairman. The excerpts herewith published are from Part I, "Unit Hot Water Consumptions." The report was presented before the 20th Annual Convention of the American Gas Association, Atlantic City, N. J., October 10-13, 1938.—(Abstract by G A S).**

THE Volume Water Heating Committee of the Industrial Gas Section was given the assignment of collecting all the information possible on unit hot water consumptions for commercial and industrial uses.

The tests herein reported give not only unit water consumptions, but in most cases the typical daily draw, and also information on the efficiency of using gas for this water heating. It is felt that the data on hot water for the use of workers in industrial plants is particularly significant in view of the trend toward supplying such water for sanitary reasons, and the tendency to the use of such wash fountains as are herein discussed. A greater knowledge of this trend and the efficiency of the use of gas for such water heating will permit the industrial gas engineer to get this load in industrial plants, particularly those where steam is not available throughout the plant or over the whole year.

Test A: In this installation hot water is used for washing parts in a bus garage and also in the garage washroom. The quantity of bus parts washed was not determined, but there were 27 workmen taking showers daily. The equipment included a 1000-gal. horizontal storage tank, a cast iron boiler—200,000 B.t.u. input per hour, and a direct hot water system. Table No. 1 lists the data assembled from this test.

Test B: In this operation hot water is used for an office building having 12 washrooms and 57 hot water faucets. The water piping to 80 per cent of the faucets is recirculating, and the hot water is used between 9 A.M. and 6 P.M. by 570 office workers for washing and from 6 P.M. to 9 A.M. for cleaning offices.

The equipment consists of a 250-gal. horizontal storage tank and a direct connected water heater, input 250,000 B.t.u. per hour. The data compiled from this test is listed in Table No. 2.

Test C: In this instance hot water was used for washing by the workers in an industrial plant, a factory producing heavy machinery. The mechanical workers are greasy and dirty. The water is supplied through eight conventional Bradley wash fountains, not equipped with foot controls.

The equipment includes a 575-gal. storage tank and an immersion gas water heater equipped with seven blast burners having a total capacity of 170,000 B.t.u. per hour. The tank is well insulated. The test data for a six-months' period is as follows:

Average daily hot water use	1400 gals.
Average number of mechanical workers using hot water	350
Average number of draftsmen using hot water	150
Water temperature	135° F.
Flue gas temperature	300° F.
Gas usage....1.50 cu. ft. of 565 B.t.u. gas per gallon of water raised 80° F.	
Overall thermal efficiency	79%
Gals. of 135° water per person	2.8

Test D: In this test the operation consists of washing grind compound from lenses in baths of 100° F. water, which is obtained by mixing cold water and 130° water through an automatic mixing valve. The equipment consists of a 300-gal. storage tank (30-in. diameter by eight ft. long) immersion gas water heater, equipped with nine atmospheric burners firing in 1¼-in. alloy tubes running the length of the tank. The tank is covered with 2½ in.—85 per cent magnesia.

The test data showed that during 11 working days in a 15-day period, the total hot water use was 26,244 gals. The water was heated through an 85° temperature rise (40° inlet—125° outlet). The gas usage was 44,000 cu. ft. of 537 B.t.u. gas. Overall thermal efficiency was found to be 78 per cent.

TABLE NO. 1. DATA COMPILED FROM TEST A

Water Usage —	Gal.	Cu. Ft. Gas 525 B.t.u.	Temp. Rise °F.	Thermal Effic.
1st day	1,705	1,900	54	
2nd day	1,550	1,700	51	
3rd day	1,460	1,500	50	
4th day	2,360	1,900	56	
5th day	525	1,300	55	
6th day	450	800	43	
7th day	1,580	1,900	60	
Total	9,630	11,000	Weighted Ave. 54°	75%

TABLE NO. 2. DATA COMPILED FROM TEST B

Period—1938	No. of Days	Total Gas* Cu. Ft.	Total Water Gal.	Ave. Temp. °F.	Inlet Water Temp.	Cu. Ft. Per 100° Gal.	Effic.	
Feb. 19 to 28	7	16,515	5,260	158	60	3.07	*50	Heater off nights and week-ends.
Feb. 28 to Mar. 7	7	18,000	5,900	160	60	3.03	51	Heater on week-end — off during week-day nights.
Mar. 7 to 14	7	18,800	6,150	160	60	3.06	50	Heater off nights and week-ends.
Mar. 15 to 22	7	19,000	5,650	160	60	3.36	46.5	Heater on continuously for period.
Mar. 22 to Apr. 2	11	30,400	8,650	160	60	3.52	44.5	" " "
Apr. 2 to 11	9	19,500	5,700	160	65	3.61	43.3	" " "

*533 B.t.u. per cu. ft.

Remarks:
(1) Typical use of 160° F. water in office is .76 gal. per person per day.
(2) Use for cleaning is equivalent to .50 gal. per person per day.
(3) Thermal efficiency of installation decreases from 50 per cent to about 45 per cent when heater is kept lit all night.

TABLE NO. 3. DATA COMPILED FROM TEST E

Unit Factors	Case No. 1	Case No. 2	Case No. 3	Case No. 4
Gals. 160° F. water per bed/day general use	11.7	18.2*	12.2	12.2
Gals. 200° water per bed/day laundry	—	—	11.2	14.5
Total gals. water per bed/day	—	—	23.4	26.7
Number of beds in hospital	200	—	150	100

* Includes water in Nurses' Home.

Test E: In this test data was compiled from an installation furnishing hot water for a hospital. The data compiled is shown in Table No. 3.

Test F: In this operation hot water is used for washing glasses, dishes, etc., in connection with serving of some fountain lunches, but mostly fountain drinks and ice cream.

The equipment is a 30-gal. storage water heater with input of 20,000 B.t.u. per hour.

Hot water used for washing glasses, dishes, etc., from fountain 25 ft. long, which is worked by from three to eight persons at various periods of the day. Seating capacity at tables is 80 people.

Test Data: efficiency and water usage with different temperatures of water is as follows:

	Temperature of Water 175° F.	143° F.
Gals. used in three day period	320	450
Gas used, cu.ft.— 500 B.t.u.	1225	1225
Cold water temperature	62	60
Efficiency	50%	51%
Relative volume of sales reported by store owner	110%	100%

These tests prove that a 30-gal. gas storage water heater will supply a large fountain with a number of workers. The tests at the two different temperatures indicate that this type heater is equally efficient in heating water to 143° and in heating it to 175°. They also indicate the same amount of gas heated water for 10 per cent more business, in the case of the 175° water.

Outline of Requirements For a Technical Report

THE basic requirements of a report, by either a committee or an individual, can be visualized by anyone giving the matter a little thought. Such requirements are discussed in our Pacific Coast Gas Association Bulletins. "Committees. Why? When? Where? How?" (page 5) and "The Story of the Pacific Coast Gas Association" (pages 31 and 32). These bulletins are available at the office of the Managing Director.

GUY CORFIELD

For a Technical Report, certain requirements should be emphasized and certain others added, in the interests of uniformity and clarity, to attract and assist the busy reader, to satisfy the person interested in detail, and to help the major committee chairmen in appraising and editing the contributions at the time of the inevitable year's end rush. With this thought in mind the following requirements are submitted:

• **REPORT OF RESEARCH COMMITTEE of Technical Section, Pacific Coast Gas Association, Guy Corfield, Southern California Gas Co., chairman. This committee, newly organized, was formed to review, coordinate, and suggest activities for the Technical Section. The excerpt here printed was a portion of the report presented before the Technical Section at the 45th Annual Convention of the Pacific Coast Gas Association, Santa Barbara, Calif., September 14-16, 1938.—(Abstract by G A S.)**

1. Report to be on one side of 8½ x 11 in. sheets, leaving a 1½ in. margin at top and left side. Figures and tables should have similar margins.

2. All figures charts, and tables to be placed at the end of the report. Figures to be plainly identified as Figure 1, Figure 2, etc., and tables as Table I, Table II, etc. All figures and tables to be referred to in the text, in consecutive and ascending numbers.

3. Report to be built up, with section headings, as follows:

(a) Summary, outlining and including all the pertinent details, to the extent that a person reading it will have definite information on what the report contains, with respect to purpose, procedure and results or conclusions. This summary to be condensed, however, so that it is not longer, in words, than 10 per cent of the total words in the report.

(b) Introduction, briefly describing the reason for doing the work, making the investigation, etc.

(c) Body of report, divided into logical sections such as location of work, apparatus used, procedure developed, results obtained; each section to have a subheading or subtitle.

(d) Conclusion, stating the apparent value and application of the results; if the work is satisfactorily finished, or if to be continued in the near future, or when; or should be continued as opportunity arises.

(e) Bibliography, listing all known information that has been published on the subject; giving the name and date of issue of the book or publication, the name of the article (if in a magazine) the page on which it commences, and the author's name. Ordinarily, published material should not be quoted.

4. Any report that bases its findings and conclusions on experimental or other data should include sufficient of these data so that a person particularly interested in the subject can go over them and either verify the conclusions made by the author or draw his own conclusions. Such data should be condensed into tabulations or other forms requiring the minimum of printed space; considerable volume, or lack of general reader interest, is not objectionable, if otherwise completeness would be sacrificed, as the data could be filed in the Managing Director's office and a footnote added to the printed paper to the effect that such data would be loaned to any interested and responsible person.

■ ■

Cassatt Is U.G.I. Director

The board of directors of the United Gas Improvement Co., Philadelphia, Pa., at a meeting on September 27, elected Robert K. Cassatt a member of the board, succeeding the late Clarence H. Geist.

Proposed Pipe Line Would Serve 375,603 Population

THE total population of communities to be served by the proposed Kansas-Minnesota natural gas transmission line, now awaiting R.F.C. financial approval, is 375,603, according to reports released by Kansas Pipe Line and Gas Co., builders of the proposed line. The estimated number of meters that will be attached in the fifth year of operation is 72,578.

According to reports from the office of L. E. Fischer, president of the Kansas Pipe Line Co., the total investment involved will be $21,470,000. This total includes $12,675,680 for main pipe lines, $3,480,000 for tap lines, $2,300,000 for compressor stations, and $800,000 for valves, crossings, dehydrators, measuring stations, pipe protections, etc. Other expenditures cover right of way, engineering and legal expense, supervision, etc. The company has made a preliminary application to the Reconstruction Finance Corp. for a $20,000,000 loan to finance line construction.

The cost of the main line pipe is based on a wall thickness of 3/8 in. Figures quoted on compressor stations cover a sufficient number of stations to take care of ultimate development. Half of the capacity is considered ample to handle the peak load of the first winter's operation.

Of the more than 72,000 proposed meters to be served by the line, 36,000 will be in communities now served with manufactured gas, and approximately 36,000 will be in towns for which distribution systems must be constructed.

The total number of towns to be served by proposed line is 129. Of these, eight are in Kansas, with a total population of 8882; 32 towns would be served in Nebraska, population totaling 47,514; in South Dakota, 33 towns with a total population of 84,424; 53 towns would be served in Minnesota with a population of 189,379; 48,907 people in three towns would be served in North Dakota.

■ ■

New Well Extends Lyons Gas Field, Kansas

The Lyons gas field, Rice County, Kan., was extended a quarter-mile eastward, early in October, by Spring-Rose Drilling Co.'s No. 1 Brubaker, which blew in for a gage of 34,000,000 cu. ft. a few feet in the Arbuckle lime.

The well is being deepened in the hope that it will increase in flow. It is located a mile southeast of No. 1 Pulliam, the state's largest gas well, and more than one fourth mile northeast of a well now having a potential of 34,000,000 cu. ft. per day.

Extinction of Gas Flames Through Use of Steam

● JESSE S. YEAW and LOUIS SHNIDMAN, Rochester Gas & Electric Corp., Rochester, N. Y., in a paper, "The Extinction of Gas Flames by Steam," presented before the Technical Section of the 20th Annual Convention of the American Gas Association, Atlantic City, New Jersey, October 10-13, 1938.—(Abstract by G A S).

THE extinction of the flames of hydrogen, carbon monoxide, methane, benzene vapor, coal gas, and producer gas, by increasing proportions of steam, has been experimentally studied using a spherical 350 c.c. glass explosion pipet and a spark discharge as a source of ignition.

The work was carried out as part of the study being conducted at the Rochester Gas & Electric Corp. Laboratories concerning the use of steam in purging equipment used in the manufacture, purification, and distribution of fuel gas. Steam has been used successfully as an inert gas for this purpose for a number of years because of its effectiveness and availability as compared with other inert gas mixtures commonly recommended. The literature, however, contains but a few widely scattered experimental results in which the effect of steam upon the explosive limits of combustible gases has been studied.

A sample of natural gas was obtained and used in place of pure

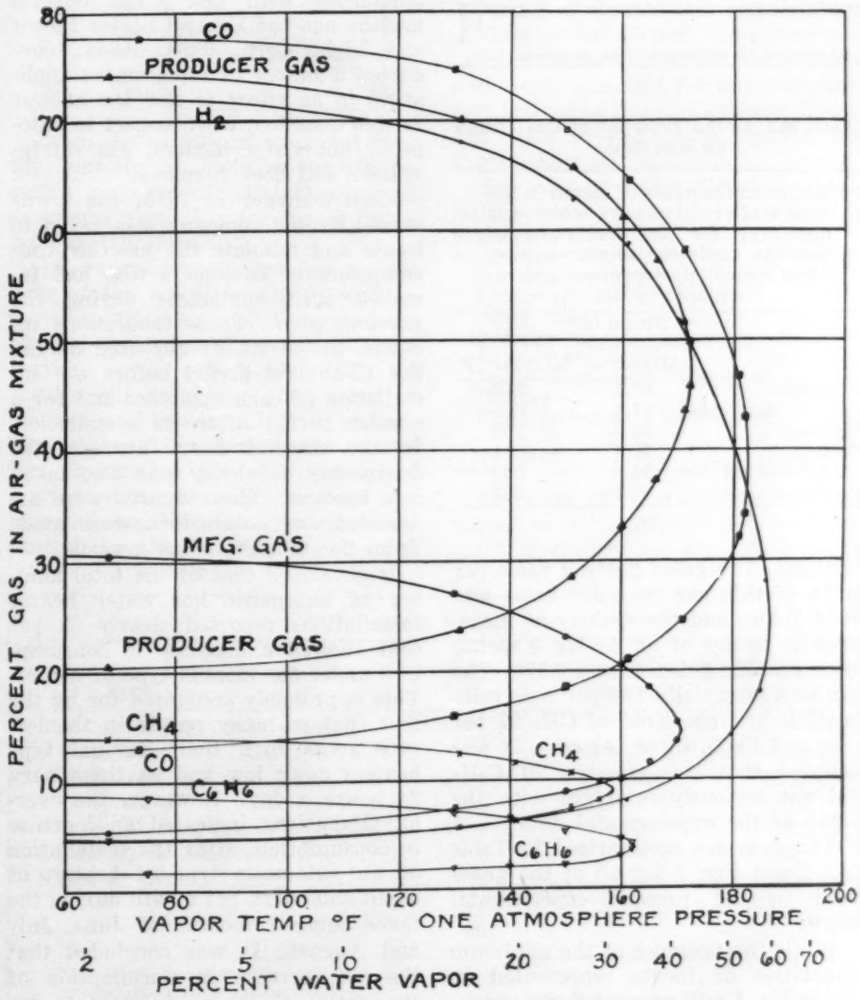


FIG. 1. The extinction of combustible gas flames by water vapor. Area within each loop indicates explosive range.

TABLE NO. 1—The Extinction of Combustible Gas Flames by Steam

Minimum fractions of steam in the steam-gas-air mixtures to prevent flame propagation.

	% Steam in Steam-Gas-Air Mixture	Temp. of Mixture °F.
Hydrogen	58.9	187
Carbon Monoxide	53.1	182
Methane	33.0	161
Benzene	34.5	163
Manufactured Gas	41.5	171
Producer Gas	42.5	172

TABLE NO. 2—The Extinction of Gas Flames by Steam

Minimum fractions of the steam-gas mixtures which are necessary for the prevention of possible explosion mixtures regardless of any subsequent dilution with air*

	% Steam in Steam-Gas Mixture	Temp. of Mixture °F.
Hydrogen	88.3	207
Carbon Monoxide	77.1	200
Methane	84.0	204
Benzene	94.4	210
Manufactured Gas	84.1	204
Producer Gas	62.0	189

*Assuming no condensation of the steam.

TABLE NO. 3—The Extinction of Gas Flames by Inert Gases

Minimum fractions of steam in the steam-gas mixtures which are necessary for the prevention of possible explosive mixtures even when completely condensed and replaced by air

	% Steam in Steam-Gas Mixture	Temp. of Mixture °F.
Hydrogen	95.4	210
Carbon Monoxide	87.3	205
Methane	95.2	209
Benzene	98.3	211
Manufactured Gas	94.8	209
Producer Gas	80.1	201

methane. The gross heating value per cu.ft. of this gas on a dry basis was 1034 B.t.u., and the density as measured by means of an Ac-Me 4 spring type gravity balance was 0.570. The gas was essentially 100 per cent combustible and consisted of CH_4 97 per cent and C_2H_6, three per cent. It was believed that this quantity of C_2H_6 did not seriously interfere with the value of the experimental data.

The data are summarized in Table No. 1 and Fig. 1 for all of the gases used in the present experimental work.

While the presence of the minimum quantities of inerts represented in Table No. 1 will prevent flame propagation until the fraction is reduced by dilution with air, common purging practice requires that enough inert be added to the combustible so that no such subsequent dilution with air could result in an explosive mixture. Table No. 2 shows the quantities of steam necessary to insure safety in this regard. The temperature data in Table No. 2 represent the temperatures of the mixtures due to the presence of steam.

The fact that steam is condensable should also be considered in this evaluation of the relative purging properties of various inerts. If the extreme case in which all of the steam is condensed and replaced by air is considered, then it is obvious that sufficient steam must be originally added to the combustible gas to reduce the fraction of combustible gas below its lower explosive limit in air. These data are summarized in Table No. 3, and they represent the maximum limit of safe purging practice when steam is used as the purge medium.

The Net Gas Consumption of Replacement Appliances

● **B. LYMAN BELL, Central States Power and Light Corp., in a paper, "Net Consumption of Replacement Appliances," presented before the Gas Division of the Oklahoma Utilities Association in Oklahoma City, Okla., September 26, 1938.—(Abstract by GAS).**

OPERATING men in the industry often wonder just what effect new appliances have upon the quantity of gas sold—that is, what is the *net* increase or decrease in consumption due to the replacement of old appliances with new ones. Several months ago the Central States Power and Light Corp., Tulsa, Okla., conducted a survey of replacement appliances in an effort to find the answer to this question, with respect to automatic hot water heaters, gas refrigerators and floor furnaces.

Each manager in 10 of the towns served by the company was asked to locate and tabulate the monthly consumptions of customers who had installed such appliances during the previous year. These tabulations included the M c.f. of gas used during the 12-months period before the installation of each appliance and for a similar period after its installation. In the case of floor furnaces, the degree-day deficiency was also taken into account. These figures were assembled and conclusions were made from the tabulations as a whole.

It developed that of the total number of automatic hot water heater installations reported, nearly 33 per cent showed a decrease in consumption under the manual type of heater. This is probably accounted for by the fact that so many people in the low rate areas turn their manual type heaters down low and let them burn 24 hours a day. However, the overall tabulations indicated an increase in consumption, after the installation of an automatic type of heater, of about 350 cu. ft. per month during the three summer months of June, July and August. It was concluded that the *net* increase in consumption of the automatic type of water heater over the manual type was present, although small—amounting to approximately four to five M c.f. per year.

An analysis of gas refrigerator installations showed that the average consumption under actual working conditions and during the peak refrigeration months of June, July and August was 1375 cu. ft. per month.

It is true that refrigeration will fall off during the spring, fall and winter months, but when it is considered that 54 per cent of total customers received at least one "no-bill" during the period from June through September, it will be appreciated just how important this summer refrigerator load is. For a 12-months period the consumption has been estimated at from 10 to 12 M c.f.

In order that all figures could be reduced to a common denominator, floor furnace consumptions were based upon M c.f. per degree-day. The overall consumptions of this group of floor furnaces indicated that the installation of this type of appliance would effect an increase in consumption of 14.1 per cent after the constant cooking, water heating and refrigeration loads had been deducted. Expressed in M c.f., this 14.1 per cent increase would mean that for an average heating season of from 3500 to 4000 degree-days the net increase in consumption would be about 15 M c.f. per season for each installation. Since most of the towns served are under 10,000 population, it has been assumed that the large majority of floor furnaces which were installed replaced the open type of space heater.

Some Operating Data on Summer Air Conditioning

● **REPORT OF THE American Gas Association Industrial and Commercial Air Conditioning Committee, CHARLES R. BELLAMY, Columbia Gas & Electric Corp., New York, N. Y., chairman. Part I includes excerpts from a section of the report entitled, "Operating and Other Data on Gas Summer Air-Conditioning Installations." Part II includes excerpts from a section of the report entitled, "Commercial Air-Conditioning Installations Using Gas Fuel for Summer Service Data Submitted by Gas Utility Companies," by W. F. FRIEND, Ebasco Services, Inc., New York, N. Y. The report was presented before the 20th Annual Convention of the American Gas Association, Atlantic City, N. J., October 10-13, 1938.—(Abstract by G A S).**

PART I

INFORMATION on air-conditioning installations using gas as a fuel was obtained for the 1938 report by the Industrial and Commercial Air Conditioning Committee of the Industrial Gas Section, American Gas Association from the replies to a questionnaire sent out to gas utilities. Of these 30 installations reported, one is a Kathabar, two are Lectrodryer, and the remaining are Silica Gel.

Although most of the installations are small, two are of medium size, the largest being of 68.2 tons total capacity. Several are used for special drying operations with the air supplied to special machines or driers. Two sheet metal lined rooms are reported where extremely low relative humidities are desired, the sheet metal being used to prevent the infiltration of moisture which would normally occur through the use of more normal construction.

Of the 26 reporting on the source of cooling, one is a split system using a separate compressor, two tap off of brine systems, and the other 23 use water — one from its own private supply from a nearby lake, five from city supply, and 17 not specifying, but probably mostly from city supply.

Sufficient data were supplied on nine jobs to determine accurately the per cent of latent to total heat load. Six showed approximately 100 per cent latent heat removed, two around 40 per cent, and one at 20.2 per cent. It is interesting to note that the comment on this last installation indicates that although satisfactory technical performance is obtained the purchaser is not satisfied with the operating cost, especially of the gas unit. Of the remaining jobs, indications are that three more belong in the 100 per cent latent class and seven more have an exceedingly high ratio of latent to total. There is no indication of what the ratio may be on the remaining 11 installations.

Only two of the 13 that specified the use to which the air was put covered identical processes. The uses are as follows:

Use		No. of Jobs
	Food Products	
1	Malt Starch Packing	1
1	Special process	1
	Pharmaceutical	
1	Pill Coating	1
1	Effervescent Salt Making	1
	Chemical and Photographic	
1	Setting Gelatin on Plates	1
1	Test Room	1
1	Laboratory	1
	Leather Work	
1	Cementing Belt Splices	1
	Shoe Industry	
1	Finished Sole Drying	2
1	Shoe in Process	1
1	Spray Paint Room	1
1	Lithographic Press Room	1
12	Totals	13

From the variety of uses and from the scarcity of installations, it becomes very evident that there is an enormous possibility for future industrial installations.

An expression of opinion by the user of the results obtained was secured in 28 cases. Of these five expressed decided satisfaction, 13 satisfaction, seven satisfaction with the results but trouble of one form or another, and two trouble with no complete story of how serious the trouble was or whether the results obtained warranted the trouble. A third one reported trouble but has more recently reported that they are about to make some minor changes which they believe will overcome their present difficulties. When the abnormal and extremely difficult conditions required of several of these installations are considered, the above record of satisfaction is extremely good.

Although not asked for in the questionnaire, four utilities commented that there had been no service required, while one reported that "service has been excessive."

Four reports that were received expressed the view that the installations were of little value to the utility, but these four were from only two utilities. Four other reports classified the installations as very valuable and four as of medium value.

PART II

FOR inclusion in this report, there was secured from individual gas utilities, information on installations now using gas fuel for summer comfort and industrial applications. Types and sizes of equipment covered are summarized in Table No. 1.

Premises on which reported installations were made are classified as below.

	No.
Utility offices	14
Other offices	4
Restaurants and coffee shops	7
Department stores	2
Dress shop	1
Theater	1
Hotel (other than coffee shop)	1
Total	30

At least 13 installations are reported as using natural gas, and two using manufactured gas; from other

TABLE NO. 1

Type	No.	Capacity, Tons	
		Range	Total
Silica gel dehumidifier with:			
City water	8	4.3—28.4	68.2+
Well water	9	10.5—49.5	223.9+
Compressor*	5	2.9—113	177.5+
Gas-engine compressor	6	6—40	113.7
Steam-engine compressor†	1	199	199
Kathabar dehumidifier	1	42.5	42.5
	30		824.8‡

*One driven by gas-engine.

†Steam generated in gas-fired boilers.

‡Includes only 23 installations, of 30 listed; seven not reporting on size estimated as aggregating 250 tons additional.

data given, it is inferred that of remaining 15, probably nine use natural gas, and six manufactured. Rates reported in effect for natural gas range from $0.30 to $0.60 per M c.f., and for manufactured gas $0.60 to $0.70 per M c.f.

In all cases except one, owners are reported as fully satisfied with performance of installation; the sole objection expressed was preference for more fresh air and less recirculation, and this of course does not relate directly to type of apparatus (gas or electric) utilized.

Of installations not in utility offices, none are reported to have been furnished by a gas utility company, though in most cases a utility engineer worked with contractor or manufacturer in promoting the sale.

Many of the utilities express satisfaction at connecting this summer load, but several consider revenue small in proportion to investment required of owner. None report excessive amount of servicing required after first year of operation. In no case was special inducement rate offered. One believes use of motor-driven compressor with silica gel, involving two kinds of equipment, creates additional sales problem for gas utility. Another reports that with city water available at 59° F. for sensible cooling, prospects have successfully used this without independent dehumidification by silica gel.

The Manufacture of Carbon Dioxide From Natural Gas

● **A. F. MICHAEL, Southern California Gas Co., Los Angeles, Calif. in a paper, "The Manufacture of CO_2 from Natural Gas" presented before Sales and Advertising Section at the 45th Annual Convention of the Pacific Coast Gas Association, Santa Barbara, Calif., September 14-16, 1938.—(Abstract by G A S).**

INDUSTRIAL gas men commonly think of gas as a source of energy for manufacturing processes. When, in addition, gas provides the raw material for an industry, we have one of its unusual applications. Such is its application at the new plant of the California Carbonic Co. in Los Angeles, where the combustion of natural gas creates the carbon-dioxide gas used in making liquid CO_2 and dry ice, and generates the steam used in operation of the plant.

There is something approaching the fantastic in a process wherein gas, which has its origin in combustion at temperatures in the neighborhood of 2300° F., becomes solid matter with a temperature of 110° F below zero. Fig. 1 shows a flow diagram of the processes involved in the manufacture of CO_2 from natural gas.

In its dual role natural gas is fired under two Stirling water tube boilers rated at 100 hp. each which are equipped with full automatic multi-jet burners. Steam generated at 150 lbs. pressure provides most of the energy required in the plant operations. The flue gases from the boilers containing an average of 11 per cent CO_2 enter a stack manifold from which, by means of an arrangement of dampers, all or any part of them are directed into the processing equipment to become the finished products of the plant.

The manufacturing process is made up of three more or less distinct phases; first, the production and separation of CO_2 gas from the products of combustion, second, the production of liquid CO_2 from the gas, and third, the manufacture of dry ice.

Beginning the first phase the flue gases are carried through a duct to the scrubber, a large water sealed concrete box filled with limestone which is sprayed with water. The gases enter at the bottom of this unit, pass up through the bed of limestone and out near the top. This washing action cleans the gases and cools them down to about 115° F. and the limestone chemically removes any traces of impurities.

Leaving the scrubber the gases pass through a large positive blower and into the absorption tower. The speed of the blower is regulated to maintain a draft of approximately one in. of water on the scrubber and boilers. The absorption tower is a large cylindrical tank approximately 14 ft. in diameter and 110 ft. high filled with coke. The bottom of the tank contains a solution of potassium carbonate or lye to a depth of about two ft. This solution is constantly pumped from the bottom to the top of the tower where it is sprayed over the coke bed and filters back down through the bed to the base of the tower. The flue gases enter at the base of the tower and pass up through the coke bed. On the way CO_2 is absorbed in the lye solution and the remaining elements in the flue gases pass out through an opening in the top of the tower. This opening is proportioned so as to maintain a positive pressure of five to six in. of water in the tower as this has been found to increase substantially the absorption in the lye solution.

The strong lye solution, that is, the solution which has absorbed its load of CO_2, is picked up near the liquid level in the base of the tower and pumped to the lye boiler. Here it is heated to about 210° F. by means of steam coils and the available CO_2 mixed with water vapor is boiled off. The temperature and liquid level in the boiler are automatically maintained by control mechanisms. The weak lye solution, stripped of its load of CO_2, drains into a surge tank under the boiler and is pumped back to the absorption tower. Between the absorption tower and the lye boiler are a series of heat exchangers wherein the strong lye solution going to the boiler is heated by the weak lye solution returning to the tower. This preheats the strong lye to about 180° F. and cools the weak lye down to about 90-95° F at which temperatures absorption is found to be most satisfactory.

The mixture of CO_2 gas and water vapor leaving the lye boiler passes through a set of water cooled coils where most of the water vapor is condensed and removed and enters a water sealed gas storage tank. This completes the first phase of manufacture and we now have nearly pure CO_2 gas in storage.

Transformation to Liquid

In order to understand the next phase, that is, the transformation of the gas to liquid form, it is necessary to know something of the characteristics of CO_2. Carbon dioxide cannot exist as a liquid at atmospheric pressure and exists as dry ice only because of its extremely low temperature. For it to exist in either liquid or solid form certain definite conditions of temperature and pressure must be maintained. For example: at a temperature of 88° F. a pressure of 1066 lbs. per sq. in. absolute is required to liquefy the gas; at 32° F. 505 lbs. per sq. in. and at -31° F. a pressure of only 174 lbs. per sq. in. absolute is required. At a temperature of -69.9° F. and a pressure of 75.1 lbs. per sq. in. absolute CO_2 can exist in either liquid, solid or gaseous form or a combination of all three. At atmospheric pressure of 14.2 lbs.

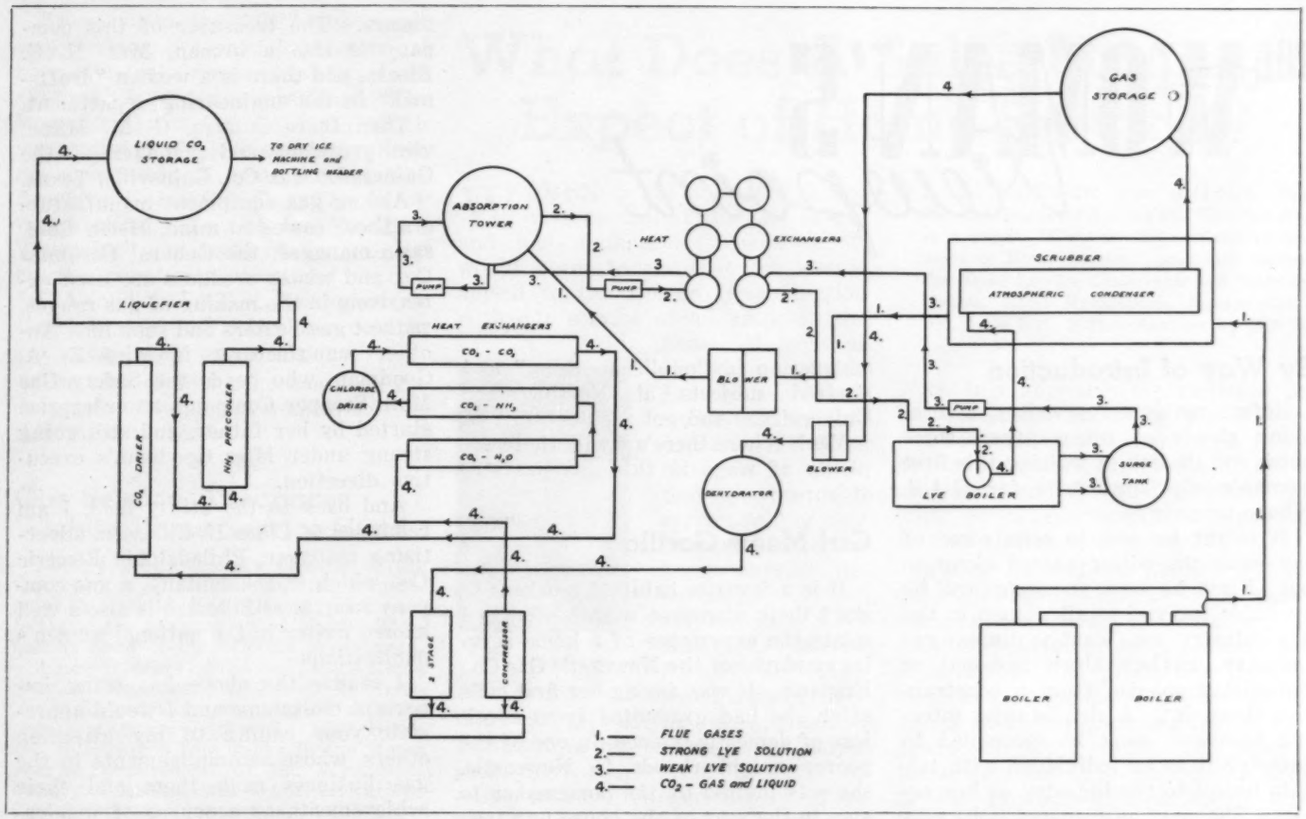


FIG. 1. Flow diagram of the processes involved in the manufacture of CO_2 from natural gas.

per sq. in. solid CO_2 or dry ice has a temperature of -110° F.

The liquefying process then may be one either of compression of the gas to high pressures at ordinary temperatures or a combination of compression and refrigeration at lower pressures and temperatures. The California Carbonic Co. uses the latter methods.

Beginning the second phase of manufacture, the CO_2 gas is pumped from the storage tank by a small positive blower and discharged into a dehydrating unit. Here it is bubbled up through a brine solution kept at a temperature of 29° F by an automatically controlled ice machine unit and essentially all the water vapor is condensed and removed.

From the dehydrator the gas goes into a two-stage, steam-driven compressor where its pressure is raised to about 210 lbs. per sq. in. Discharged from the compressor at a temperature of about 170° F, it enters a series of shell and tube heat exchangers where it is cooled successively by water, ammonia, and "blow back" CO_2 gas from the dry ice machine, to temperatures somewhere near 0° F. This temperature, however, is dependent on and varies with the operation of the ice machine. Between the second and third heat exchange units the gas passes through a calcium chloride drier to further remove water vapor.

Leaving the last of the heat exchangers the CO_2 enters a long cylindrical tank known as the CO_2 drier. This unit is ammonia cooled and, as it is just behind the expansion valve, it has the lowest temperatures of any point in the refrigeration system, ranging between 40° and 60° F below zero. Owing to its high velocity and the limited cooling surfaces in the drier the CO_2 remains gaseous even though temperatures and pressures in the equipment are now in excess of those required for liquefaction. The temperature is such, however, that the last traces of water vapor are condensed and drained off.

Liquefying Process

From this drier the CO_2 gas passes through a second cylindrical tank known as the ammonia pre-cooler which contains liquid ammonia coils just ahead of the expansion valve. The low temperatures of the CO_2 gas from the drier are in this way used to help cool the liquid ammonia before expansion. The CO_2 gas then enters a series of ammonia cooled coils of considerable surface area where it becomes liquid and drains by gravity into the liquid CO_2 tank. It is now at a pressure of approximately 210 lbs. per sq. in. gage and a temperature of -24° F and is ready for the final steps of bottling or conversion to dry ice.

Before proceeding with a description of dry ice making, it is best to outline the absorption refrigeration system used in liquefaction of the CO_2. This unit, one of the latest of its type, is rated at 7½ tons and is similar in principle to that used in the gas fired domestic refrigerators. Its operation is as follows. A strong solution of aqua ammonia is heated with steam coils in a heating tank known as the generator and ammonia vapor, NH_3, is driven off at a pressure of approximately 150 lbs. per sq. in. This vapor is liquefied in a series of water cooled coils and passes into cooling coils in the ammonia precooler previously mentioned. The cold liquid ammonia is discharged from the pre-cooler through an expansion valve into the CO_2 drier at temperatures down to -60° F. and passes from there into the refrigerating coils in the CO_2 liquefier. The ammonia gas returning from the liquefier at -20° to -25° F. passes back through the outer shell of the pre-cooler to cool the

(Continued on Page 66)

THE WOMAN'S *viewpoint*

By Way of Introduction

Before me is a typewriter, several blank sheets of copy paper, some notes and the job of writing this first woman's viewpoint page for *GAS*. Where to start?

It might be well to echo some of the ideas the editor passed along to me. First, he says, your page will be available for and to all women in the gas industry, who want to discuss gas industry, rather than personal or feminist problems, from a constructive viewpoint. A girl, he says, entering business, must be reconciled to entering it as an individual, with talents useful to the industry as her assets. She must be prepared to be governed by its existing rules and ethics, accept its routines and discipline and not expect any special favors or concessions because she is a girl. From this point on, she has the right as an individual to point her career in any direction commensurate with her ability and willingness to work.

Should she have a different viewpoint, inherently because she is a woman, good luck to her, sez he, if she can "sell" it to her management. But, warns Mr. Editor, above everything else keep the page constructive. Fair enough!

Off the Job Studies

There is the recent case, according to Jessie McQueen of the A.G.A. staff, of the New England sales executive, asking for information about available classes in journalism and advertising for his secretary, who has shown a marked aptitude along these lines. His secretary wants to learn more about the subject so that with her knowledge of the company's sales policies, she can take some of the advertising and publicity work off her boss' shoulders.

Mae S. Fletemeyer, dean of women, Northern Indiana Public Service Co., years ago laid down her secretarial and stenographic notebook. Realizing the importance of being able to think clearly and talk lucidly on her feet, for years she took evening courses of instruction in "public speaking" and kindred subjects at Northwestern University. And got results.

Yes! Where there's a will, there are plenty of ways in this gas industry of ours.

Girl Meets Gorilla

It is a favorite habit of speakers to start their discourse with a story. I relate the experience of a home service employee of the Newcastle Gas Co., England. It was among her first calls after she had graduated from a college of domestic science. In one of the poorer neighborhoods in Newcastle, she was invited by the homemaker to step to the rear of the house and take a look at the gorilla. As she relates it, she couldn't figure out whether she was to meet a denizen of the jungle, or merely the good lady's beloved husband. But come what may, home service must go on, so she bravely faced the ordeal. The experience ended happily. The gorilla was a "griller," which is the British term for broiler.

Guest Editor Jessie McQueen

Since this is the first month that *GAS* has included a special page devoted to the women in the industry, it is only fitting that the Guest Editor for this month's issue should be a woman prominent in the affairs of the industry. Such a one is Jessie McQueen of the American Gas Association. The part that women are playing in the development and expansion of the industry is summarized in her editorial on Page 15.

Women Executives

There are many of them throughout the gas industry. The first who comes to mind is Mary E. Dillon, president of the Brooklyn Borough Gas Co. This company, serving part of Brooklyn, including Sea Gate, Coney Island, Sheepshead Bay, Gravesend, Brighton Beach, Gerritsen Beach and a part of Flatbush, with a total population of approximately 300,000 people, has around 85,000 customers. The treasurer of this company is also a woman, Mrs. H. S. Steers, and there is a woman "draftsman" in the engineering department.

Then there is Mrs. G. M. Milne, vice president and manager of the Gainesville Gas Co., Gainsville, Texas.

Among gas equipment manufacturers there comes to mind, Helen Reid, sales manager, the General Ceramics Co., and whose products are used extensively in the making of gas ranges, radiant gas heaters and such like. Another manufacturer is Miss E. A. Goodman, who heads the Safety Gas Main Stopper Company, an enterprise started by her father, and still going strong under Miss Goodman's executive direction.

And back to the utility field, I am reminded of Clara H. Zillessen, advertising manager, Philadelphia Electric Co., which is, incidentally, a gas company too. Miss Zillessen is also a well known writer in the national women's publications.

I realize the above has many important omissions, and I would appreciate your calling to my attention others, whose accomplishments in the gas business rank them and their achievements as a source of inspiration, as Miss Rarey suggests, to the want-to-amount-to-something women in the gas industry.

Credit Lines

This page, according to my notes, was first suggested by Lucy Rarey, secretary to the district manager, Southern Counties Gas Co., Monrovia, Calif. In her capacity as chairman of the Monrovia Women's Committee, last April she wrote our editor:

> ". . . While, of course, there have been many articles of a general nature which I have sincerely recommended to our members . . . and which have been read by many . . . it is a source of disappointment that some space and thought and attention is not specifically given to that large part of the personnel in the industry composed of women. I know there are many subjects that could be presented which would be of real benefit to our group. . . . and to similar groups throughout the industry."

In a later letter, Miss Rarey wrote:

> "There is one type of material which we believe would be justified and that is, articles bringing to our attention the possibility of achievement which can be gained by women in the gas industry . . . and thus stimulate ambition and the desire to really "amount to something" in the industry. Perhaps this could be accomplished by articles regarding women already successful in this field."

Then, when the "CP" gas range was making its initial promotional bow, Mr. Jenks received a letter from Clifford E. Paige, president, The Brooklyn Union Gas Co., with which was enclosed a folder edited by Ruth Soule, director of home service, The Brooklyn Union Gas Co. The folder was entitled, "To Get the Woman's Viewpoint" and incidentally, judging by the popularity it gained around A.G.A. and A.G.A.E.M. headquarters, struck a new and refreshing note in gas range sales promotion.

The idea of this page has been endorsed by several gas women, so . . . this page is born.

■ ■

Gas Service Announces Wichita Home Service Head

Doris Ingle is the new director of the Gas Service Co. Home Service Department in Wichita, Kan. Her appointment followed the resignation of Myrtle Strahan as head of the Wichita department.

A new member of the company's Home Service Department is Jewell T. Hensley of Kansas City, who started with the organization on October 3. Miss Hensley, following a few weeks in the Home Service Department of the Wyandotte County Gas Co., will work in various Gas Service Co. properties.

■ ■

Shawnee, Okla., Home Service Head Appointed

Jeanette Stearns took office on October 20, as home service director for the Oklahoma Natural Gas Co. in the Shawnee district, according to F. E. Padden, district manager. Home service will be a new addition to gas company activities in Shawnee. Miss Stearns' new duties also will include home service work in Prague.

■ ■

Home Service Director for New Albany, Ind., Appointed

Katheryn Barton has recently been appointed home service director for the Public Service Co. of Indiana in New Albany, Ind. Miss Barton, who was formerly associated with a gas range manufacturer, has conducted cooking schools throughout Indiana, Ohio, Michigan, and New York.

■ ■

W. R. Chitty Promoted

Walter R. Chitty, formerly local manager of the Puget Sound Power and Light Co.'s Sultan office, Everett district, Wash., is now acting as local manager of the Snohomish office, since his appointment to that post September 1. He replaces Charles H. Gillespie.

■ ■

McMurray Retires

Joseph McMurray, after 27 years service with the East Ohio Gas Co., retired from company duties in September. Mr. McMurray had acted as company agent in Hubbard, Ohio, for the past 20 years.

What Does A Sales Manager Expect of Home Service ?

● F. X. METTENET, vice president, The Peoples Gas Light & Coke Co., Chicago, Ill., in a paper, "What the Sales Manager Expects of Home Service," presented before the Home Service Conference and Training Course, Hotel Muehlebach, Kansas City, Mo., June 7-10, 1938.—(Abstract by G A S).

WOMEN in the home decide and have control of the sale of gas and gas appliances. Therefore, it would seem to us that we should appeal to the women in connection with our service of all kinds in the home. It looks as though we should have women in our sales organization to interpret these thoughts to us so that proper and correct selling may be done. Hence, the home service department.

F. X. METTENET

What Is a Sales Manager's Major Problem? One would naturally think it the selling of appliances. However, in my judgment the major problem is *people;* i.e., the type of people we have representing us. If we have the proper type of people representing us in the proper job, sales will take care of themselves. There are two fundamentals that each person in every job must possess. First, know his job, and second, know how to get along with his fellow employees and our customers.

What Is the Fundamental Activity of Home Service? In our opinion, it is educational service coupled with subtle selling, with emphasis on subtle selling. It is most difficult indeed to be subtle about anything that one does not know how to do; therefore, in order to be subtle about selling it is essential to know something about selling, and each home service girl should have considerable training in the art of selling.

In connection with educational service we must be subtle about that also whether it is in connection with platform work or floor demonstrations. Every woman who cooks thinks she is a good cook and her family shares this opinion. If the home service girl, in her platform work, takes the attitude that she is the teacher and the audience is a group of pupils, and that she knows a great deal more than her audience, she is making a grave mistake; but if she starts with the mental attitude that everyone in the audience is a good cook, and by coupling the knowledge of the good cooks in the audience with her own knowledge on cookery, between them they can learn. With this approach the audience or the customers attending the demonstration will be with her and a great deal of good work can be done for our customers and for our company. In other words never look down to people, look up and be with them.

Where Does Home Service Fit in the Sales Organization? The sales manager has two departments: a production department and a promotional department. The production department can be compared to the direct selling of automobiles and day by day production must result. The promotional department is the helping arm to the production department, and this helping arm consists of advertising, window display, floor display, dealer cooperation, and home service. Therefore, home service is properly placed in the promotional end of a sales department.

What training would I be eager for if I decided to be a well grounded home service specialist?

1. Sales training so that I may be able to be subtle in connection with subtle selling in my home call work.
2. Platform training so I may be subtle in connection with my educational work.
3. Home call training so I may become familiar with the problems of the housewife which would be of great assistance to me in my platform work or educational work so that I may be able to know what women are actually thinking about in their home in connection with gas service.
4. Food and cooking training so that I will know something about the proper balancing of diets and attractive preparation of foods to "tickle the palate" and to improve health generally.
5. Poise training so that I may always appear convincing and at ease in home call and platform work.
6. Voice and breathing training so that in connection with home call work and platform work I may be able to please the customer and win his confidence by developing an attractive personality.

Guyer Succeeds Davis as President of A. G. A. E. M.

THE election and installation of E. R. Guyer, vice-president, Cribben and Sexton Co., Chicago, as the new president of the Association of Gas Appliance and Equipment Manufacturers was one of the high points of the Third Annual Meeting of the association, held October 10, at the Hotel Claridge, in Atlantic City, N. J. Mr. Guyer succeeds Merrill N. Davis, executive vice-president, S. R. Dresser Manufacturing Co., Bradford, Pa., retiring A.G.A.E.M. president. Frank H. Adams, vice-president, Surface Combustion Corp., Toledo, Ohio, was elected association vice-president, and F. E. Sellman, vice-president, Servel, Inc., N. Y., was re-elected treasurer.

W. E. Derwent, Rockford, Ill., chairman of the A.G.A.E.M. Domestic Range Division, announced at the meeting the adoption by manufacturers of Certified Performance Gas Ranges of a national sales promotion program for 1939 in behalf of the CP range, specifications for which were recently devised by a committee of the gas industry.

R. S. Agee, sales promotion manager of the A.G.A.E.M., said that the cooperative sales, advertising and publicity program for the 1939 project would be worked out in detail within the next few months. He reviewed also results of the 1938 CP promotion campaign launched in September by the Association in conjunction with the American Gas Association's national advertising program.

G. E. Frazer of Chicago, counsel of the Association, told the gas appliance manufacturers that the most valuable asset of the group was the cooperation of such agencies of distribution as department stores, utilities, plumbers and others. Reviewing the three years existence of the association, he said that the support of these selling and distribution agencies had contributed more than anything else to the progress of gas appliance manufacturers.

F. E. Sellman, of New York, complimented the membership for its support of the various 1938 sales and advertising campaigns conducted for various divisions of the association.

Merrill N. Davis reported that the members of the association were joining whole-heartedly in the gas industry's participation in the New York World's Fair in 1939, which, he said, should put the industry to the forefront among industrial exhibitors there. Mr. Davis emphasized the further need of public relations through the use of advertising, publicity and other media.

The 1939 annual convention of the Association of Gas Appliance and Equipment Manufacturers will be held at the Roosevelt Hotel, New York, May 24 to 26 (1939), it has been announced by H. N. Ramsey, of Gloucester City, N. J., chairman of the Time and Place Committee for the convention.

E. R. Guyer, Cribben & Sexton Co. and newly elected president of A.G.A.E.M., receives the congratulations of Merrill N. Davis, S. R. Dresser Manufacturing Co., retiring A.G.A.E.M. president.

United Gas to Lay New Line From Katy Field to Houston

The United Gas Co. will start construction soon on a 46-mile natural gas pipe line to run from the Katy field in Waller county to Houston, Texas, where it will intersect the company's trunk line.

Gas development of the Katy field is being carried on by the Stanolind Oil and Gas Co. Gas production comes from a depth of more than 11,000 ft.

Meade Assumes Duties With Consolidated Electric & Gas

E. J. Meade, formerly San Angelo manager of Community Natural Gas Co., Texas, is now acting as general manager of five subsidiary companies of the Consolidated Electric and Gas Co. in Virginia, West Virginia, and Tennessee. Mr. Meade was succeeded in San Angelo by E. L. Buelow.

W. J. HAGENAH

B. W. LYNCH

Standard Gas and Electric System Changes Announced

BERNARD W. LYNCH, president of Standard Gas and Electric Co., Chicago, Ill., has announced important organization and personnel changes in that company and in Public Utility Engineering and Service Corp., service company for the Standard Gas and Electric Co. system.

At a meeting of the Standard Gas and Electric Co. board of directors, held October 5, Victor Emanuel of New York was elected a director of that company to succeed Georges F. Doriot, who resigned as a member of the board. Mr. Emanuel, who was also elected chairman of the board, is president of Standard Power and Light Corp.

The board of directors of Public Utility Engineering and Service Corp., at a meeting held also on October 5, accepted the resignation of Mr. Lynch as president and director of that corporation. William J. Hagenah of Chicago was elected president and director to succeed Mr. Lynch. Mr. Hagenah, was formerly a vice-president and special counsel for the service corporation.

These changes have been brought about as the result of the recent emergence of Standard Gas and Electric Co. from reorganization proceedings under Section 77B of the Federal Bankruptcy Act, according to Mr. Lynch, and because of negotiations now pending for the reacquisition by Standard Gas and Electric Co. of Public Utility Engineering and Service Corp., as a wholly owned subsidiary. The latter corporation is now a mutual service company rendering services to the public utility operating companies in the Standard Gas and Electric Co. system.

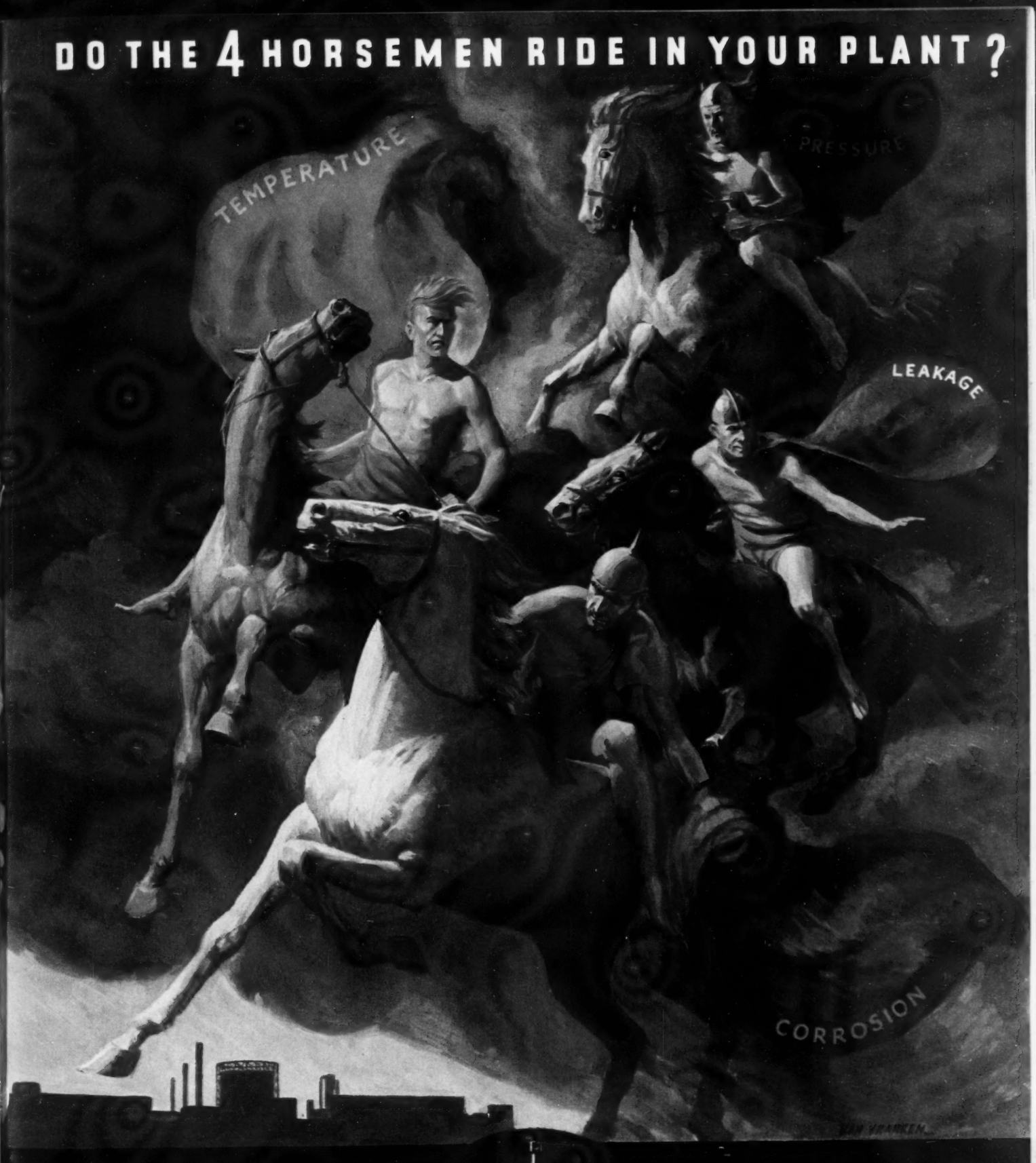
Uinta Pipe Line Co. Lays Supplemental Gas Line

The Uinta Pipe Line Co. is laying a supplemental gas pipe line between Green River, Wyo., and Coalville, Utah, as part of the company's main gas carrying system to Salt Lake City and other Utah communities. The new 18-in. line, which will extend 53 miles, is expected to reach completion by November 20.

Socher is Chief Engineer

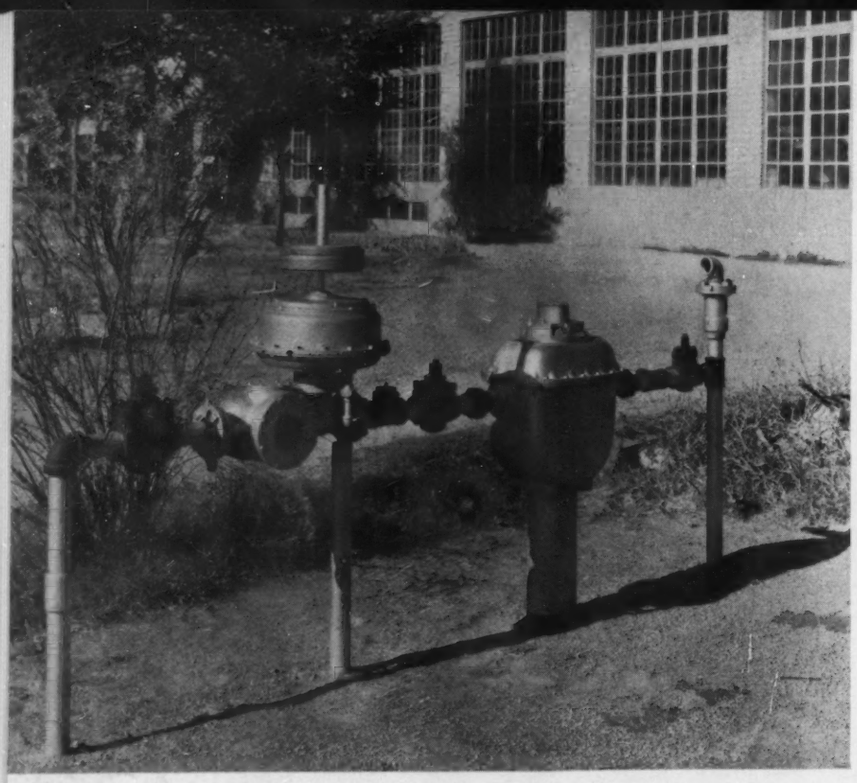
Fred H. Socher has recently been promoted to chief engineer to be in full charge of the engineering and drafting department for the Pittsburgh Group of the Columbia System. He will be located at the Warrington Ave. office. He succeeds the late H. D. O'Connor.

DO THE 4 HORSEMEN RIDE IN YOUR PLANT?



NORDSTROM PLUG VALVES

MAINTAIN CONTROL



Industrial installation of Emco Meter and Emco Low Pressure Regulator with Nordstrom Valves.

LEAKAGE is *inexcusable* at the point of VALVING

Unaccounted-for losses of gas are costly enough but leakage can prove disastrous. Nordstrom Lubricated Plug Valves eliminate line losses to a great extent—but most important—they DO *NOT* leak.

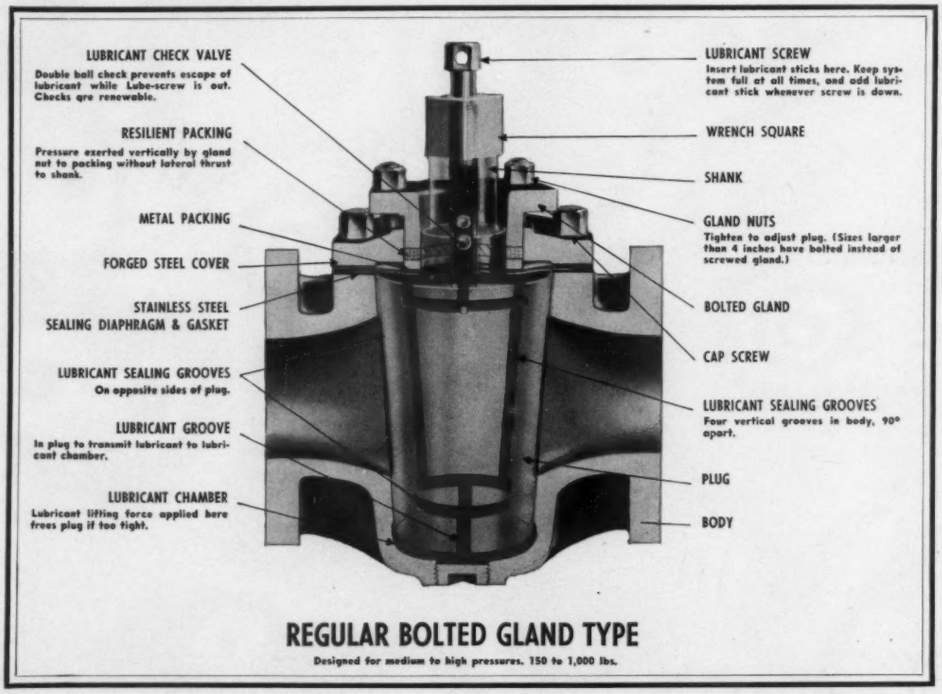
INFALLIBLE GUARD AGAINST LEAKAGE

In emergencies, Nordstrom Valves can be closed quickest. When valved only at long intervals they always open or close easily; no freezing, no stems to corrode, no grooves that have become obstructed.

Sizes range from the ½" Curb Cock Service Type to the giant 30" gear-operated type for transmission lines. All pressures handled.

Ask for Bulletins

PRODUCTS—NORDSTROM VALVES; EMCO GAS METERS and REGULATORS; PITTSBURGH LIQUID METERS.


LUBRICANT CHECK VALVE
Double ball check prevents escape of lubricant while Lube-screw is out. Checks are renewable.
RESILIENT PACKING
Pressure exerted vertically by gland nut to packing without lateral thrust to shank.
METAL PACKING
FORGED STEEL COVER
STAINLESS STEEL SEALING DIAPHRAGM & GASKET
LUBRICANT SEALING GROOVES
On opposite sides of plug.
LUBRICANT GROOVE
In plug to transmit lubricant to lubricant chamber.
LUBRICANT CHAMBER
Lubricant lifting force applied here frees plug if too tight.
LUBRICANT SCREW
Insert lubricant sticks here. Keep system full at all times, and add lubricant stick whenever screw is down.
WRENCH SQUARE
SHANK
GLAND NUTS
Tighten to adjust plug. (Sizes larger than 4 inches have bolted instead of screwed gland.)
BOLTED GLAND
CAP SCREW
LUBRICANT SEALING GROOVES
Four vertical grooves in body, 90° apart.
PLUG
BODY

REGULAR BOLTED GLAND TYPE

Designed for medium to high pressures. 150 to 1,000 lbs.

MERCO NORDSTROM VALVE CO. *A Subsidiary of* **PITTSBURGH EQUITABLE METER CO.**

Main Office: Pittsburgh, Pa. Branch Offices: New York City, Buffalo, Philadelphia, Columbia, Memphis, Chicago, Kansas City, Des Moines, Tulsa, Houston, Los Angeles, Oakland. Canadian Licensees: Peacock Brothers, Ltd., Montreal. European Licensees: Audley Engineering Co., Ltd., Newport, Shropshire, England.

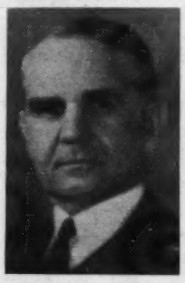
NORDSTROM VALVES

WITH PATENTED "SEALDPORT" LUBRICATION

Only Nordstroms meet every major valve need

W. B. Gribble Retires After 30 Years With Hope Natural

WALLACE B. GRIBBLE has retired from service as general superintendent with the Hope Natural Gas Co., Clarksburg, W. Va., following more than 30 years of association with the company. Mr. Gribble's retirement became effective October 14, following his 65th birthday.



WALLACE B. GRIBBLE

In recognition of Mr. Gribble's retirement from his post as general superintendent, which position he has held for the past 11 years, 850 fellow employees of the Hope Natural Gas Co. and affiliated companies held five testimonial dinners, October 15, at the Waldo Hotel, Gore Hotel, Stonewall Jackson Hotel, Masonic Temple, and Episcopal Parish House, followed by a general assembly of the five groups in the Washington Irving High School Auditorium in Clarksburg.

Mr. Gribble first came to Hope Natural in 1917, working with the Land Title Department. Previous to that time he had been associated with the Carter Oil Co. He is a member of the West Virginia Oil and Natural Gas Association and for many years has served on its board of directors.

■ ■

Sacramento Valley to Have Gas From Buttes Wells

Construction is now under way on a new pipe line to bring natural gas from the Buttes Oilfields, Inc., wells in the Sutter Buttes into industrial and domestic service in the Sacramento Valley.

O. G. Green, president of the Buttes company, has announced that a contract to supply gas for distribution by the Pacific Gas and Electric Co. in Chico, Oroville, Gridley, Yuba City, Marysville and Colusa has been made with his company. The P.G. and E., according to reports, has agreed to begin gas service in these towns early in November.

■ ■

Mid-West Gas School to Meet At Iowa State College

The Midwest Gas Association and Engineering Extension Service of Iowa State College will conduct the 18th Annual Mid-West Gas School and Conference on November 14, 15, and 16, at Iowa State College in Ames.

The conference will cover problems of gas distribution, metering, utilization, and production.

■ ■

East Ohio Co. Extends Gas Service to Norton

The Public Utilities Commission of Ohio recently granted the East Ohio Gas Co., Cleveland, authority to put natural gas service into effect in Norton township. The new line will be about 1100 ft. long.

Discoveries of Michigan Gas Lead to Service Expansion

WITH the recent development of new natural gas reserves in Michigan, the distribution of Michigan gas to cities and towns in that state has become more widespread. At the present time the Northland Natural Gas Corp., Evart, Mich., is laying 24 miles of three-in. high pressure pipe line from wells in Sheridan township, Mecosta county, Mich., to the village of Barryton and the city of Evart.

R. A. Whitehead, president of the Northland Co., anticipates that the company will distribute upward of 75,000 M c.f. of Michigan natural gas during the coming year. The population to be served in Evart and Barryton is approximately 2300. From the several industries located in this area an annual consumption of approximately 25,000,000 cu. ft. is expected. Gas service was scheduled to be in Barryton by October 25, while distribution will start in Evart on November 20.

During the past year natural gas from Michigan wells has been introduced into McBrides and Stanton, the former by a cooperative, and the latter by Edward C. Dalley of Flint, Mich. The city of Edmore has recently been piped with natural gas by Consumers Power Co.

The natural gas supply for Edmore is from wells recently brought in in the vicinity of this community. The discovery of the new "Edmore" field by Socony-Vacuum has resulted in four new distributions in the state utilizing Michigan gas and serving a population of approximately 10,000. Six new wells have recently been drilled in the Edmore area and it is reported that 36 more are to be drilled as soon as possible.

Coincidentally with the discovery of Monroe oil in Freeman township, northwest of Clare, there has been considerable gas developed in the area within the past few months. In the deep drilling for oil in this region, gas wells of 21,000 M c.f. and 17,000 M c.f. have been encountered. Geologists estimate that possibly 400,000,000 M c.f. of proven gas reserves have been established in this area of Michigan.

In Arenac county the Berea gas field is unused, and in various parts of the state many segregated wells of 1000 M c.f. and upwards open flow lie unused. It is reported that more than 25,000 M c.f. of casing head gas is wasted in Michigan daily.

Mr. Whitehead of Northland reports that of the officially registered present open flow of Michigan gas, less than three per cent would be taken daily to supply all of the remaining Michigan markets, including those now supplied. For this reason Michigan gas producers are hoping to extend the use of Michigan gas to the state's remaining markets.

Mr. Whitehead reports that the small "Broomfield" field, Michigan's first important gas area, has produced over seven billion ft. of gas from an original open flow volume of but 110,000 M c.f. and is still producing.

At the present time, it is reported, attempts are being made to obtain federal aid for extension of independent distribution of Michigan gas to Michigan markets.

■ ■

Cabot Enlarges Rochester Line Booster Station

Godfrey L. Cabot, Inc., Olean, N. Y., is adding to its Rochester Line Booster station another six-cylinder 600 hp. Clark Right Angle Compressor to enlarge the station's capacity.

CALENDAR

November

The Institute of Gas Engineers—London, England, November 1-2.

Annual Mid-West Gas School and Conference—Iowa State College, Ames, Iowa, November 14-16.

American Petroleum Institute—19th Annual Meeting, Stevens Hotel, Chicago, Ill., November 14-18.

Institute of Gas Plant Operators—North Carolina State College of Agriculture and Engineering, University of North Carolina, Raleigh, N. C., November 17-18.

December

National Exposition of Power and Mechanical Engineering*—Grand Central Palace, New York, N. Y., December 5-10.

Joint Accounting Conference — Palmer House, Chicago, Ill., December 12-14.

May, 1939

Association of Gas Appliance and Equipment Manufacturers — Annual convention, Roosevelt Hotel, New York City, May 24-26.

September, 1939

Pacific Coast Gas Association—46th Annual Convention, Fairmont Hotel, San Francisco, Calif., week of September 4.

October, 1939

American Gas Association—21st Annual Convention, New York City, week of October 9.

* Includes exhibit sponsored by A.G.A. Industrial Gas Section.

SALES Slants

How Much Do You Know About the "CP" Gas Range?

By J. T. VAN RENSSELAER
Southern California Gas Company

SALESPEOPLE all agree that the new "CP" gas range is a "natural" to sell. Its points of advantage are so numerous that no prospect need be turned away unsatisfied provided you know all the answers. Selling this new super cooking appliance is a case where knowledge really is power. The following simple test has been developed to test "CP" knowledge. By answering the questions you can determine your own "certified performance." Until you have satisfied yourself that you have done the best you know how, do not turn to the answers which may be found on Page 48. Score as indicated, 100 per cent being perfect.

1. Which one of the following answers to the question "What does 'Certified Performance' stand for?" is correct?

(a) "Certified Performance" is the trade brand of a certain manufacturer of gas ranges. (b) The term "Certified Performance" is used to designate gas ranges which conform to 24 rigid specifications of operation and construction. (c) The name "Certified Performance" is a term agreed upon by the entire gas industry to designate a new type of super gas range that meets 22 rigid specifications of performance and construction over and above the requirements for standard A.G.A. approval previously considered a high mark of merit. (d) "CP" is a mark used by the American Gas Association to designate those gas ranges which have proved their superiority over ranges using other types of fuel. (e) The term "Certified Performance" has been selected by the American gas industry to describe the 1939 model gas range.

2. One of the following statements about the oven of a certified performance gas range is false. Which one is it? (Score 10).

(a) "CP" gas range ovens must have automatic lighting. (b) "CP" gas range ovens must have automatic heat control. (c) "CP" gas range ovens must reach a temperature of 350 degrees in six minutes. (d) "CP" gas range ovens must reach desired temperature with only 32.8 per cent as much gas as was allowed last year for A.G.A. approved gas ranges. (e) "CP" gas range oven vents must discharge toward kitchen wall to prevent circulation of cooking vapors.

3. Designate truth or falsity of these 10 statements. (Score 1 for each correct answer).

(1) Top burners on "CP" gas ranges must be dual purpose type for controlled simmering and waterless cooking as well as heavy duty cooking. (2) At least two giant high-speed top burners, capable of boiling 2½ quarts of water in 9 minutes, are required on all "CP" gas ranges. (3) "CP" gas range top burners must light automatically. (4) Rust-resisting metal or enamel is required for all top burners on "CP" gas range. (5) Top burners on "CP" gas range must be 75 per cent more efficient than minimum requirements of 1937. (6) Usable broiler area on "CP" gas ranges is over one-third greater than former minimum requirements. (7) Efficiency standards for broilers have been established by the gas industry for the first time on the "CP" gas range. (8) The broiler on the new "CP" gas range must heat to 450 degrees in 23 minutes. (9) The new oven on a "CP" gas range is so fast that food can be baked from a cold start without preheating oven. (10) The new "CP" gas range is required to maintain an oven temperature as low as 75 degrees.

4. Which of the 10 following features are optional on "CP" gas ranges? (Score 1 for each correct answer).

(1) Utensil drawers mounted on ball bearing rollers or equivalent. (2) Effective stops on all drawers and racks. (3) Automatic clock control. (4) Extra heavy insulation on oven to keep oven exterior within 75 degrees of room temperature. (5) Flush-to-the-wall back construction. (6) A.G.A. Testing Laboratory seal of approval. (7) Six burner cooking top. (8) Griddle. (9) Full enamel throughout. (10) Lamp.

5. The question is asked: "Haven't you had 'Certified Performance' gas ranges before?" Which one of these answers is correct? (Score 10).

(a) Yes, but before the perfection of what we now call "Certified Performance" gas ranges, only one or two on the market had all the required features. (b) No, before the 22 requirements of certified performance were established, no one gas range manufacturer had yet combined all the desired features.

6. A prospect wants to know the advantage of controlling the oven temperature down to 250 degrees. Which one of the following is the correct answer? (Score 10).

(a) to keep the kitchen cool. (b) to prevent wall discoloration from superheated cooking vapors. (c) to allow accurately controlled low temperature baking, roasting, oven canning and the like. (d) to prevent cooking failures and stop food wastage. (e) to prevent wastage of fuel.

7. Which one of the following is the best answer to the question "Why is the 'CP' gas range more economical to own and operate?" (Score 10).

(a) because gas fuel is the cheapest fuel, and it is used at its highest efficiency in the new "CP" gas range. (b) because it saves time, fuel and food through faster burners, automatic lighting, more efficient burners, heat control, dual purpose top burners allowing waterless cooking, low temperature oven control, smokeless broiling, and super cleanliness. (c) because it costs only a little more than an ordinary gas range and operates more efficiently. (d) because it costs no more than an ordinary range through three super savings: 1. savings in time by improved convenience; 2. savings in fuel by improved efficiency; 3. savings in food by improved performance.

8. If asked "What's the good of larger broiling area?" which one of the following answers would be the most accurate? (Score 10).

(a) to save cooking time and trouble by being able to broil steaks and the like without constantly changing position on broiling pan. (b) to save fuel costs by having to change position of broiling food less often. (c) to keep from having constantly to open broiler to change position of food on broiling pan and thus allow smoke to escape into the kitchen. (d) to encourage greater use of the broiler.

9. Asked if the dual purpose burner was used on ranges before the "CP" range was developed, would either of the following answers be correct? If so, which one? (Score 10).

(a) Yes, many gas ranges were equipped with a dual purpose burner for simmering and waterless cooking. This, however, is the first time such burners have been specified as standard equipment on all gas ranges of a certain class. (b) No, the dual purpose burner is an entirely new development and cannot be secured on any but a "CP" gas range.

10. To the objection, "But I already have a gas range," Salesman A and Salesman B had different replies.

Which one is the most effective? (Score 10).

(1) Salesman A: Certainly, madam! However, you must remember that your present range has a greater trade-in value today than it will have a year from now or five years from now. If you turn it in today on a new "CP" gas range you will be ahead just that much, and you will have the enjoyment of cooking on the finest range that has ever been developed.

(2) Salesman B: I'm sorry to contradict you, madam, but you haven't a gas range. You have what passed for a gas range up until the time the "CP" range came on the market. The "CP" gas range, as a matter of fact, is fully 10 years ahead of any other range of whatever kind so far produced. It has so many advantages over the range you now own that you can't afford to go on cooking on an obsolete piece of equipment. The savings in time, fuel and food alone would very rapidly pay for the new appliance, and think of how much pleasure you will get out of cooking on this beautiful piece of equipment.

(Answers on Page 48)

■ ■

Memphis Power & Light Co. Holds Natural Gas Circus

"Colonel Nat's Gigantic and Colossal Eight-Ring Natural Gas Circus" was the title of the promotion feature which opened the current 16-week sales campaign sponsored by the Memphis Power and Light Co., Tenn. When the circus opened August 15, every employee of the Memphis company was given a spot in the "big show."

The purpose of the promotion, as revealed in the company's circus bulletins, is to increase gas cooking, water heating, and house heating equipment sales.

With the circus as a background for all promotional material, advertising and publicity has been carried out through the newspapers, radio, billboards, and by direct mail and bill enclosures.

■ ■

Australian Gas Co. Utilizes Films with Gas Tie-In

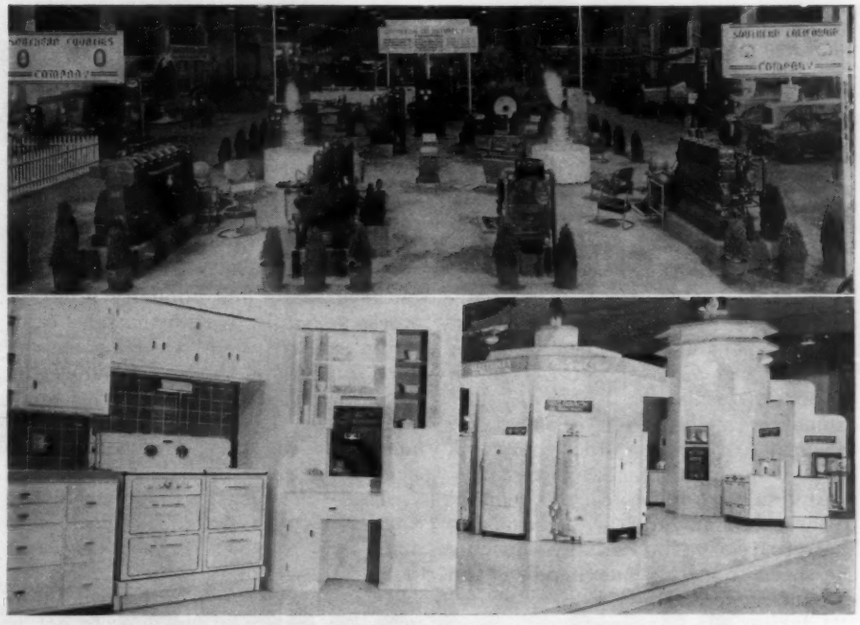
Concurrently with the showing of "Penny's Party" and "Merrily We Live," two M-G-M films featuring all-gas kitchens, in Sydney, Australia, theaters, the Australian Gas Light Co., Sydney, has reported to the American Gas Association that the company is following the same method of tie-in exploitation which more than 200 American companies used successfully when the films were presented in this country several months ago.

■ ■

"Sales—1939" is Subject Of New A.G.A. Booklet

As part of a new program to increase residential sales in 1939 the Commercial Section of the American Gas Association has issued a new booklet entitled, "Sales—1939."

The new booklet describes the current A.G.A. Residential Sales-Building program which includes the course in "Selling residential gas today," and urges participation in the A.G.A. sales cooperation course.



Southern California and Southern Counties Gas companies jointly sponsored these two exhibits at the Los Angeles County Fair held at Pomona during September. Above is seen the natural gas engine exhibit. (Note the two gas flares.) Below is the domestic gas appliance exhibit, which was visited by thousands during the 17-day event.

Crowds View Gas Exhibits at Los Angeles County Fair

THE multiple uses of natural gas in home, farm and factory were shown to a large portion of the 637,678 people who attended the 17th annual Los Angeles County Fair at Pomona, Calif., held during the last 17 days of September. Four separate exhibits featured appliances and equipment employing natural gas fuel, the two most notable being a large domestic appliance display, and an equally extensive industrial gas display, both sponsored jointly by Southern Counties and Southern California Gas companies.

The domestic appliance exhibit, situated conspicuously near the entrance of one of the main buildings, had, in addition to a complete line of modern gas appliances attractively arranged against a modernistic background, two model kitchen sets, demonstrating decorative treatments built around modern gas appliances. Throughout the 17 days of the fair, literally thousands of visitors inspected the appliances, received information from the attendants and carried away literature to study at leisure.

The industrial gas display had a prominent spot in the machinery building, and featured natural gas driven engines for water pumping. A novel attention-getter in this display were two fountains in the center, where a constant stream of water, circulated by pumps operated by the gas engines, poured out of upright pipes into white basins, while a flame, produced by natural gas from a burner set inside the pipes, played over the water.

Natural gas appliances were featured prominently in two other interesting exhibits: one being in the glass house created and operated by Miss Edna Kirby, well known domestic science expert; and the other being in the traveling kitchen, a unique mechanized cooking demonstration unit developed in Los Angeles this year.

■ ■

Chef Interviews Serve as Basis for "CP" Advertising

The Nashville Gas and Heating Co., Tenn., recently ran a new type CP range promotion ad in their local paper based on interviews with five Nashville chefs. A picture of each of the chefs working with a CP range was included with the chef's comments on the fine points of the new ranges.

F. M. Houston, chairman of the A.G.A. Domestic Range Committee, has suggested that other gas companies consider the preparation of a similar ad.

Do Your Salesmen Make the Most of their Contacts?

"HOW can I be sure my men are making the most of their contacts?"

This is a question frequently asked by sales managers, and, next to securing capable salesmen, it is the most difficult personnel problem a sales manager has to solve. It is also an extremely vital one. For no sales campaign can be effective unless the salesman is getting the maximum value from his contacts.

Any sales program can be reduced to three fundamentals: (1) arousing the prospect's interest by proving the need for the merchandise and convincing him of his ability to buy; (2) laying out a comprehensive campaign to bring the largest number of interested prospects into contact with the sales force; (3) training salesmen to turn the prospects' interest into orders.

Advertising, promotional work, contests, radio and all the other highly developed media of publicity and exploitation can be relied upon to create the buyer's interest in the merchandise, and to put him in a receptive mood to listen to the sales effort.

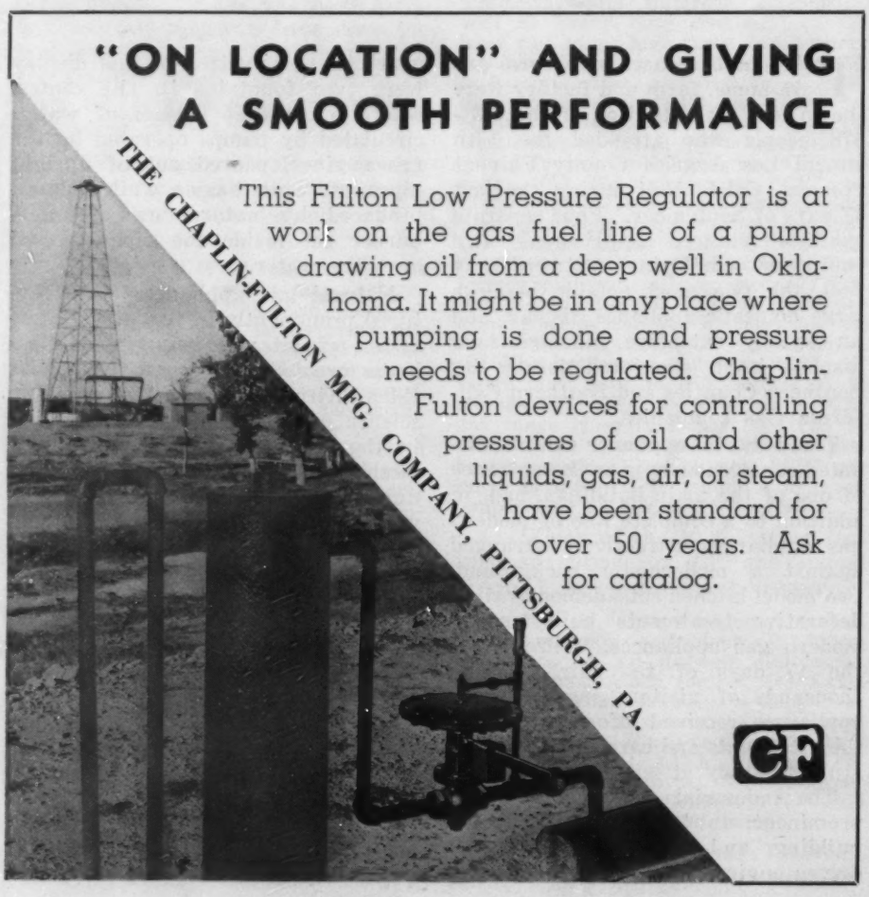
Competently and cooperatively done, an advertising and publicity program works smoothly in with the sales campaign, and through special price offers, quotas and the like, provides the necessary contact between the prospect and the salesman. Both of these phases of any sales program can be checked, accurately evaluated and controlled. It is in the final phase that the sales manager finds himself asking, "Are my men getting the most out of the contacts provided?"

It is easy enough to inform salesmen—to instruct them how to act in accordance with sound selling practice. The difficult job is to make them carry out instructions.

The problem reduces itself, on analysis, to a matter of training method.

One sales manager found his salesmen's effectiveness increased after he carried out the following program: First, he gave them a set of precise instructions in sound sales procedure, illustrating with demonstrations in the classroom. Second, he had his men try out the procedure in the field, discovering its advantages. Third, in the classroom again, he had them go through drills in the procedure, coaching them until they were letter perfect. Fourth, he followed through until he was sure the procedure had become a matter of habit.

■ ■


"ON LOCATION" AND GIVING A SMOOTH PERFORMANCE
This Fulton Low Pressure Regulator is at work on the gas fuel line of a pump drawing oil from a deep well in Oklahoma. It might be in any place where pumping is done and pressure needs to be regulated. Chaplin-Fulton devices for controlling pressures of oil and other liquids, gas, air, or steam, have been standard for over 50 years. Ask for catalog.
THE CHAPLIN-FULTON MFG. COMPANY, PITTSBURGH, PA.
CF

Thanksgiving Turkeys to Be Awarded Winning Salesmen

The Gas Service Co., Kansas City, Mo., is currently conducting its fall house heating campaign, known as the Thanksgiving Turkey Contest, which opened September 12 to continue until November 12. Salesmen from the leading new business departments of the three divisions of the company's properties will receive Thanksgiving turkeys at the close of the campaign.

Latest reports revealed that in the first five weeks of the campaign, 64 per cent of the sales quota had been reached. Sales of more than 1500 units were reported for this period by new business departments of Gas Service Co. properties.

■ ■

"Big Apple Campaign" Held By Puget Sound Power & Light

The annual fall sales campaign of the Puget Sound Power and Light Co., Seattle, Wash., is known this year as the "Big Apple" competition. Scheduled to close November 5, the campaign included a three-week qualifying period during which salesmen conducted a "dance marathon" throughout company territory to get housewives interested in new equipment to sign their program cards. Each of the 10 salesmen with the most names on their program are to be classed as "Extra fancy" and will receive an award of a box of Wenatchee apples.

■ ■

Salesman Braves Hurricane To Bring in Six Orders

Salesman Jay Elwood of the Nassau branch of the Brooklyn Union Gas Co.'s new business department, defied the elements when he braved the Atlantic seaboard hurricane, September 21, to call on prospective appliance purchasers. Despite the storm Mr. Elwood kept all his appointments with the result that he made four house heater sales and two water heater sales that day.

■ ■

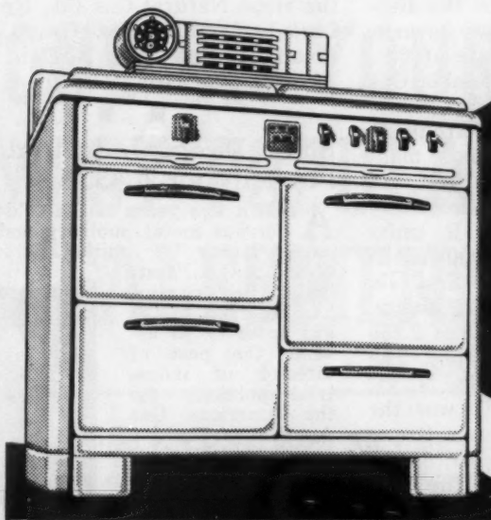
Gas Sold in Sign Language

Ira Doyle, salesman for Portland Gas and Coke Co., Ore., recently sold a gas furnace, water heater, and range without once opening his mouth, according to O. A. Stevenson, new construction sales coordinator. The reason for this procedure was that Mr. Doyle's prospects were deaf mutes. Through the use of the sign language, Mr. Doyle sold them on comfort heating and convenience and discussed the subject of rates.

REACH THE TOP

in GAS RANGE SALES

with the NEW ROPER



PREFERENCE for ROPER

FLEXIBILITY

SIMPLIFIED COOKING

ECONOMY

CLEAN COOKING

SPEED

COOL COOKING

ROPER gas ranges give you a powerful step-by-step sales presentation that meets *all* of the things people look for in a *modern* range. Dealers everywhere acclaim ROPER as the *complete* gas range . . . it has all the answers to present day needs. Get the complete story now.

GEO. D. ROPER CORPORATION

GENERAL SALES OFFICE AND PLANT: ROCKFORD, ILL.

WAREHOUSES

Chicago: 343 South Dearborn Street—Atlanta: 901 William Oliver Bldg.—Los Angeles: 2481 Porter Street
Cincinnati, Dallas, Kansas City, Milwaukee, Newark, Boston, Washington, Cleveland, Philadelphia, Roanoke

USE ROPER SALES PROMOTION PLANS

ROPER RANGES ARE IDEAL FOR USE WITH ANY TYPE OF GAS, INCLUDING BOTTLED GAS

Gas Utilities Awarded Prizes In Annual Safety Contest

THE final report of the Public Utilities Annual Safety Contest, held from July 1, 1937, to June 30, 1938, reveals that a new all-time high was reached with 165 units participating in the competition. Combination gas and electric units had the lowest frequency rates for disabling injurings, averaging 8.670.

Representatives of the winning companies in the contest were presented with bronze trophies at the Silver Jubilee Congress of the National Safety Council in Chicago, October 10-14.

In the Combination Gas and Electric Division, Group A, units averaging 200,001 or more man-hours per month during first six months, Virginia Electric and Power Co., Richmond, Va., with a frequency rate of 2.397 was the winner of a trophy. Winner of the award in Group B, units averaging 80,001 to 200,000 man-hours per month for the first six months, was the Pennsylvania Edison Co., Altoona, Pa., with a frequency rate of 2.836. In Group C, units averaging 6000 to 80,000 man-hours per month during the first six months, the trophy was awarded to the Beverly Gas and Electric Co., Beverly, Mass., with a frequency rate of 0.

In the Gas Division, Columbia Gas and Electric Corp., Columbus, Ohio, was the trophy winner of Group A, units averaging 200,000 or more man-hours per month for the first six months. The company's frequency rate was .593. In Group B, units averaging 65,001 to 200,000 man-hours per month for the first six months, the Dallas Gas Co., Dallas, Texas, with a frequency rate of 2.758 was the recipient of the trophy. The Asheville Gas Co., Asheville, N. C., with a frequency rate of 0 was the winner in the Gas Division's Group C, units averaging 6000 to 65,000 man-hours per month for the first six months.

The Safety Council awarded Honorable Mention Certificates in each group to the unit, not a trophy winner, having the greatest continuous man-hour exposure without a disabling injury during the period of the contest. In the Combination Gas and Electric Division winners of certificates were Public Service Co. of Northern Illinois, Group A; Central Illinois Light Co., Group B; and Missouri Public Service Corp., Group C.

In the Gas Division, Honorable Mention Certificates were awarded to the Hope Natural Gas Co., Group A; Laclede Gas Light Co.. Group B; and Columbia Gas and Electric Corp., Binghampton Group, Group C.

■ ■

Smith Directs Industrial Publicity for A. G. A.

AFTER two years in the field of nonferrous metal publicity and advertising, Harry W. Smith, Jr., formerly of the A.G.A. Testing Laboratories, has returned to the gas industry to assume the post of director of industrial publicity for the American Gas Association.

H. W. SMITH

Mr. Smith plans to stimulate interest in the use of gas for metallurgical, ceramic, baking, commercial cooking and water heating, institutional, hair drying, and general manufacturing and commercial purposes, through the technical, trade and business press.

An engineering graduate of Case School of Applied Science, 1930, and Princeton, 1931, Mr. Smith served with the A.G.A. Testing Laboratories both at Cleveland and Los Angeles as a research engineer. His experience in gas publicity began at the Cleveland Laboratories in 1932 when he became assistant to the manager of publications. Since 1936 he has been with The New Jersey Zinc Co., New York City.

■ ■

Answers to "CP" Sales Test

(Questions on Page 44)

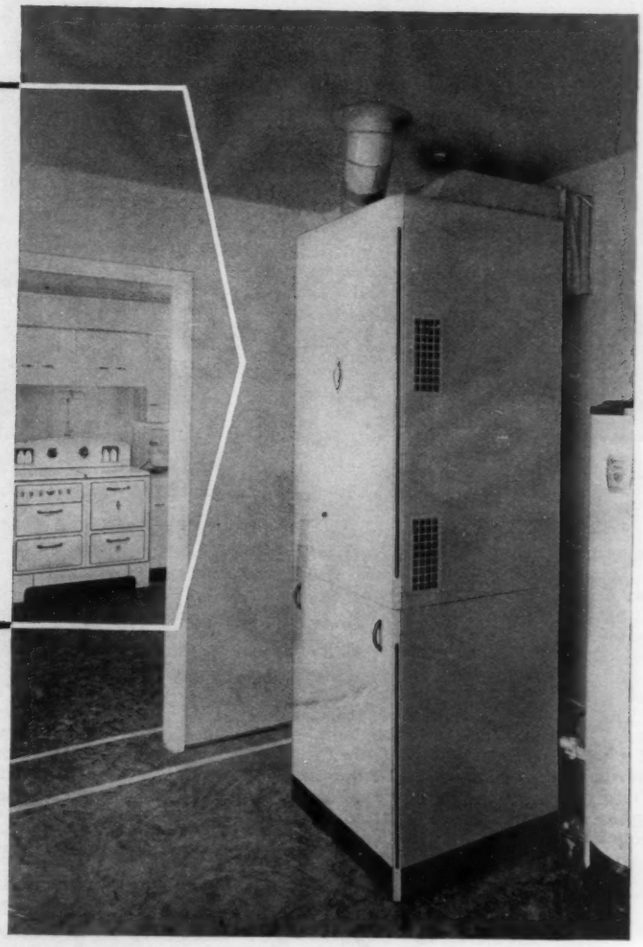
1. (c)
2. (e) Vent must discharge away from wall.
3. (1) True; (2) False (only one required); (3) True; (4) True; (5) False (one-third more efficiency is requirement); (6) True; (7) True; (8) False (600 degrees in 15 minutes required); (9) True; (10) False (Low Temperature requirement is 250 degrees).
4. (3) , (5), (7), (8), (9) and (10) are optional.
5. (b)
6. (c)
7. (b)
8. (a)
9. Yes (a)
10. Salesman B most effective.

■ ■

Fuller Is Transferred

H. L. Fuller, formerly with the new business department of the Gas Service Co. in Hutchinson, Kan., has been transferred to the company's El Dorado office. He replaces Gene Cool who will now be located in Hutchinson.

MEET ONE OF YOUR MOST POPULAR SALESMEN



He's called F.A.U.—Forced Air Unit. He's another of the Payne crew, and he deserves your attention.

Why?

Because he sells the biggest market you have—the typical American family that is building—the family that is living in—a 6, 7 or 8 room house. *These are the folks who build the load!*

Check These Outstanding Economies!

- Save basement excavation—$150 to $200 minimum.
- Save space. The F.A.U., amazingly small—only 4 feet square—can be placed on the service porch, in the kitchen or in a convenient closet. Beautifully finished in colorful enamel, it is a fitting companion to modern stoves and refrigerators.
- Simplest, *new low cost installation* in homes already built or those building.
- Positive, floor-to-ceiling thermo-control assures regulated, economical warmth.

Check This EFFICIENCY!

- Payne-planned circulation system eliminates the discomfort and waste of cold floors—hot ceilings.
- Instant warmth in every room. *Forced air* heat warms right now!
- The Payne F.A.U. works all year 'round—takes no vacation! In hot summer months powerful blowers (operating independently of heating system) provide c-o-o-l-i-n-g ventilation.
- Scientific circulation eliminates all objectionable odors—cooking, stale tobacco smoke, etc.
- The Payne F.A.U. is floated on rubber mountings—it's as quiet as a summer zephyr.

Write today for complete, illustrated information

THE IDEAL FUEL GAS

Payne FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

Michigan Consolidated to Be Headed by Woolfolk

WILLIAM G. WOOLFOLK of Detroit has been appointed president of the newly named Michigan Consolidated Gas Co., Detroit, formerly the Detroit City Gas Co. Other company officers named are Glenn R. Chamberlain, vice-president, and general manager for the Grand Rapids district; Frank L. Conrad, vice-president; John W. Batten, vice - president; Adam Kurtz, secretary and treasurer; and F. A. Baltzer, will be controller.

W. G. WOOLFOLK

The company name was changed to Michigan Consolidated in August of this year, and in September the company acquired all the capital stock of Grand Rapids Gas Light Co., Washtenaw Gas Light Co., and Muskegon Gas Co., from its parent company, the American Light and Traction Co. (See *GAS*, October, p. 53). The former Detroit City Gas Co. was incorporated in 1898.

The board of directors of the Michigan Co. is to have 17 members, eight of whom have been chosen from the local boards of directors of the Grand Rapids, Muskegon, and Ann Arbor districts, eight from the Detroit district, and one from the American Light and Traction Co. Members of the board are: William G. Woolfolk, Frank L. Conrad, John W. Batten, Henry E. Bodman, D. Dwight Douglas, Detroit; Charles S. McCain, Chicago; Walter S. McLucas, James O. Murfin, George A. Staples. Detroit; Glenn R. Chamberlain, Grand Rapids; Harley A. Haynes, C. R. Henderson, A. H. White, Ann Arbor; and O. A. Seyforth, Muskegon.

In the Grand Rapids, Muskegon, and Ann Arbor districts the personnel of the local boards of directors will continue to function as previous to the consolidation. Membership of the Grand Rapids board includes Henry Idema, Noyes L. Avery, Charles N. Remington, Richard Schaddelee, Albert G. Schroeder, James E. Spindle, Clare J. Hall, and Glenn R. Chamberlain.

■ ■

Mankato System Purchased By Minnesota Valley Co.

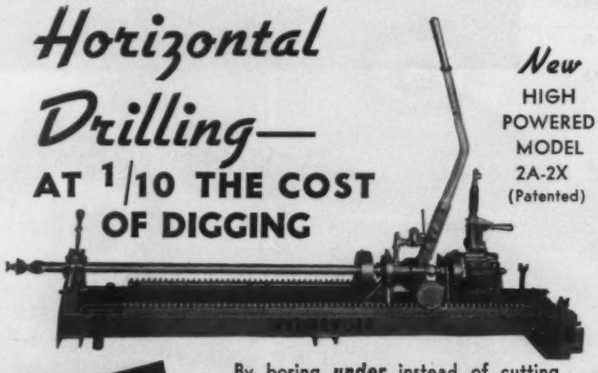
THE Mankato, Minn., gas distribution system has recently been purchased by the Minnesota Valley Natural Gas Co., according to an announcement by R. E. Crawford, president of the Minnesota company.

For the past year the Minnesota Valley Co. has operated the Mankato Natural Gas Co. for its owners, and operation of the local system will continue under the same policy and personnel.

O. M. Hoxie, formerly gas superintendent for the Northern States Power Co. prior to the transfer of the Mankato gas franchise from that company, has been named manager of the Mankato Co.

Horizontal Drilling—
AT 1/10 THE COST OF DIGGING

New HIGH POWERED MODEL 2A-2X (Patented)



AVOIDS
Ditching
Tunneling
Ramming

SAVES
Pavements
Pipe Wrappings
Money

PERMITS
Uninterrupted Traffic
Fastest Installation

Write for Bulletin No. 5

By boring ***under*** instead of cutting ***through*** Hydrauger saves time and money every time pipelines or service connections cross paved highways, streets, railroads, etc. The Hydrauger, operated by compressed air, bores horizontal holes of seven different sizes from 2½" to 14½" diameter. Through these holes pipe is installed without ramming, without damage to its wrapping, without opening seams. There is no after-settling of the surface, no back-filling, no traffic interruptions or hazards. Hydrauger gives these unequaled advantages and saves 90% of the usual cost—and does it in 75% less time!

HYDRAUGER CORP., Ltd.
116 New Montgomery Street • SAN FRANCISCO
Distributors in Principal Cities

HYDRAUGER
"The Mechanical Gopher"

Spiner and Hirsh Have New Appointments With Laclede

IN keeping with the policy of local management for The Laclede Gas Light Co., L. Wade Childress, president, has announced the appointment of L. H. Spiner as executive assistant and the promotion of Alfred Hirsh to the position of assistant to the president.

L. H. SPINER

Spiner who was formerly director of sales promotion, advertising and merchandising for the Shell Petroleum Corp., resigned from that position on August 1. He joined Shell in 1929 as a district manager in their technical products department, subsequently becoming manager, which position he held until 1934 when he was placed in charge of sales promotion and advertising. Mr. Spiner's work in Shell's technical products department included direction of the liquefied gas division. He also was identified with the National Bottled Gas Association, and in 1933 was appointed by Hugh H. Johnson to serve on the Emergency National Committee for the Liquefied Gas Industry.

One of Laclede's oldest employees in terms of service, Mr. Hirsh joined the company in 1908, and in 1915 he was advanced to secretary to the president. In 1925 the directors elected him assistant secretary and in 1937 his duties were broadened to assistant secretary-assistant treasurer, an elective position, which he will retain on assumption of his new duties as assistant to the president.

■ ■

Home Economic Students Use All-Gas Kitchens

In Calcasieu Parish, La., schools are equipped with all-gas kitchens for the use of home economics students. H. A. Norton, superintendent of schools in the parish, has had gas equipment installed in the Iowa, Westlake, Sulphur, Vinton, and DeQuincy schools. Gas is distributed in the parish by the United Gas Corp., Houston, Texas.

■ ■

Eunice, La., Votes for Natural Gas System

Citizens of Eunice, La., voted unanimously in favor of the city's proposed $115,000 natural gas distribution system. The vote was cast in October, following which it was planned to advertise for sale of bonds to finance the project which includes the expansion of present lines and the replacement of depleted equipment.

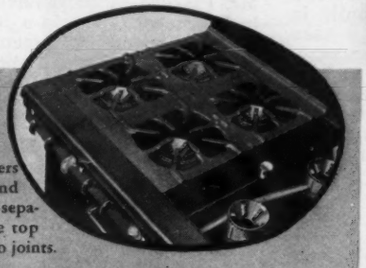
■ ■

Texas Dealers Report Gain In Floor Furnace Sales

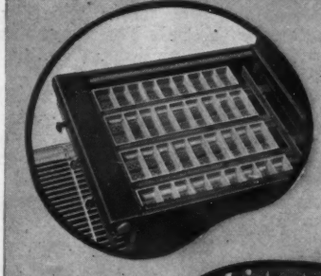
Appliance dealers throughout the territory of the United Gas Corp., Houston, Texas, have reported a 46.9 per cent increase in automatic heating sales for the month of September over the same month in 1937.

Ready for You!

A LOW-PRICED RESTAURANT RANGE THAT PAYS FOR ITSELF IN SAVINGS!

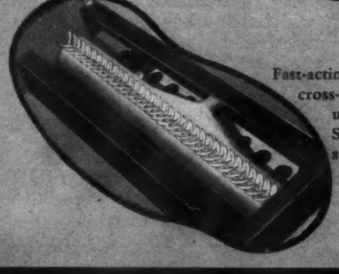


190 Series Cooking Top, showing HiLo Control round non-clog burners with grates and lighter. Note separate one piece top front cover—no joints.



Top view of 620 Broiler showing radiants and grid.

190 Series Oven—26" width takes two 12½" roasting pans side by side.



Fast-acting, efficient cross-fire burner used in 190 Series high-speed oven.

● Now even the smallest restaurant, lunchroom, tea room, or cafe, as well as church, club or lodge, can enjoy the advantages and savings of Magic Chef cooking equipment.

Here shown is one practical, handy combination of units of the new Magic Chef restaurant line—the 620 Radiant Broiler and 190 Series Range, assembled with one-piece elevated back-shelf.

This new line incorporates the many fine features of the standard Magic Chef Heavy Duty line, at a price all can afford. Oven is the High-Speed type, heats to 500° in 16 minutes, with heavy, non-sag insulation and famous Red Wheel Regulator. Oven cleans easily and stays clean because linings are gleaming, smooth porcelain enameled throughout. Broiler and top burners are highly efficient, and of exclusive Magic Chef design.

Custom cooking tops are interchangeable. You can have all grates or with polished fry plate, or griddle top in combination. In fact, equipped with all three, the cook can arrange his cooking top quickly at any time to suit his requirements.

Get complete information now. Phone or write our nearest branch.

Beyond the gas mains use Magic Chef with Pyrofax tank gas (east of Rockies)

AMERICAN STOVE COMPANY

New York • Boston • Philadelphia • Atlanta • Washington, D. C. • Pittsburgh
Cleveland • Chicago • St. Louis • San Francisco • Los Angeles • Seattle

VISIT OUR EXHIBIT — BOOTHS 120-121 — NATIONAL RESTAURANT CONVENTION

Magic Chef

AUTOMATIC • HEAVY DUTY COOKING EQUIPMENT

The Gas Range With The Famous Red Wheel

GAS IS YOUR QUICK, CLEAN, ECONOMICAL SERVANT

J. P. Pulliam Celebrates 50th Year of Utility Service

JOHN P. PULLIAM, president, Wisconsin Public Service Corp., Green Bay, Wis., completed his 50th year of public utility service last month. In celebration of the event, associates of Mr. Pulliam held a testimonial dinner in Oshkosh, Wis., on October 10. Mr. Pulliam was presented with a leather bound volume containing a message signed by approximately 1500 corporation employees, resolutions from companies with which he is associated, and messages from the American Federation of Labor, Governor La Follette, and friends in the utility industry.

At the age of 14 Mr. Pulliam began his career with the K. & I. Bridge Co. in Louisville, Ky. For about 20 years he was employed by railroads in Kentucky, Indiana, and Michigan, and in 1907 he came to Wisconsin to become associated with utilities in that state. In 1932 he was elected to his present position as Wisconsin Corp. president.

■ ■

Calif. Natural Gas Industry Is Represented Over the Air

The California natural gas industry was the subject of the "Salute to Industry" program, Thursday evening, November 3, on the coastwide network of the Columbia Broadcasting System, from Station KSFO, San Francisco. Speakers representing the gas industry were H. L. Farrar, president, Pacific Coast Gas Association, and R. E. Fisher, vice-president in charge of sales and public relations, Pacific Gas and Electric Co.

The program was one of a series sponsored in behalf of California industries.

■ ■

Natural Gas Is Served in Atwater and Livingston

Natural gas was turned into the city mains in both Atwater and Livingston, Calif., on October 4, following the completion of the $250,000 14-mile gas transmission line from Merced to the communities. The San Joaquin Light and Power Co. will furnish gas to the cities. Work on the transmission line and local distribution mains was begun July 8.

According to Raleigh Casad, Merced district manager for San Joaquin Co., there are at present 358 gas customers in Atwater and Livingston. An increase in this number is expected in the immediate future when more homes are connected and equipped for service.

■ ■

Blair Will Head W.Va. Utilities During 1939

Thomas J. Blair, Jr., was elected president of the Public Utilities Association of West Virginia at the association's 20th annual convention last month in White Sulphur Springs. He will take office on December 1, 1938. Other association officers who were elected to take office with Mr. Blair are: R. Paul Smith, vice-president; G. L. Furr, vice-president; A. Bliss McCrum. secretary; G. B. Moir, treasurer; and J. W. Cummins, assistant treasurer.

Pickard Relinquishes Duties With Laclede Gas Light Co.

BEN F. PICKARD, vice-president and general manager of The Laclede Gas Light Co., St. Louis, Mo., since 1936, has resigned from that company in order to devote his entire time to the Central States Power and Light Corp., of which he is president.

B. F. PICKARD

Mr. Pickard has announced that the executive, administrative, engineering, purchasing and budgeting departments of the Central States company will be moved from Tulsa, Oklahoma, to St. Louis, and that offices will be established in the Laclede Gas Building early in November. Central States Power and Light Corp. and subsidiaries serve 175 communities in seven states and two Canadian provinces.

A member of the American Gas Association and Southern Gas Association, Mr. Pickard came to Laclede from Tulsa in December, 1936, in a temporary capacity as operating executive. He was elected vice-president and general manager in May, 1937. During this time he has continued as president of the Central States Corp.

■ ■

Gas Pipe Line Suspension Bridge Nears Completion

Construction of the new gas pipe line suspension bridge to carry the Lone Star Gas Co.'s 18-in. line from the Texas panhandle over the Salt Fork of the Red River is nearing completion, according to recent reports.

The bridge is located about 12 miles north of Hollis, where it will replace a bridge destroyed in last spring's flood when debris of five other bridges bore down upon it. The new span has an elevation of 1770 ft. above sea level and will have a total length of 1034 ft.

■ ■

Natural Gas Statistics For 1937 Are Now Available

The American Gas Association has recently issued *Annual Statistics of the Natural Gas Industry in 1937*, Statistical Bulletin No. 33, compiled by Paul Ryan, chief A.G.A. statistician.

The new bulletin presents revised figures on the natural gas industry for the years 1929 to 1937, including companies formerly distributing manufactured gas, but which have been engaged in the distribution of natural gas since the beginning of 1937.

■ ■

Gas Meter Accuracy Proven

According to a report issued by the National Bureau of Standards, October 13, gas meters now in general use are accurate to a high degree.

The tests were made by the Bureau of Standards in cooperation with the Public Utilities commission of the District of Columbia and the American Gas Association.

...and keep your customers satisfied. Recommend Pacific Gas Heaters. There are no complaints when you specify Pacific. All Pacific Gas Heaters are equipped with the famous Pacific Multi-Tubular Burners and assure *troubleproof operation* and the utmost satisfaction. Pacific heaters carry a guarantee backed by a company with the experience and reputation of a quarter of a century. Pacific makes a gas heater for every purse and purpose. The only complete line manufactured in the West.

BE SPECIFIC...SAY PACIFIC

Pacific

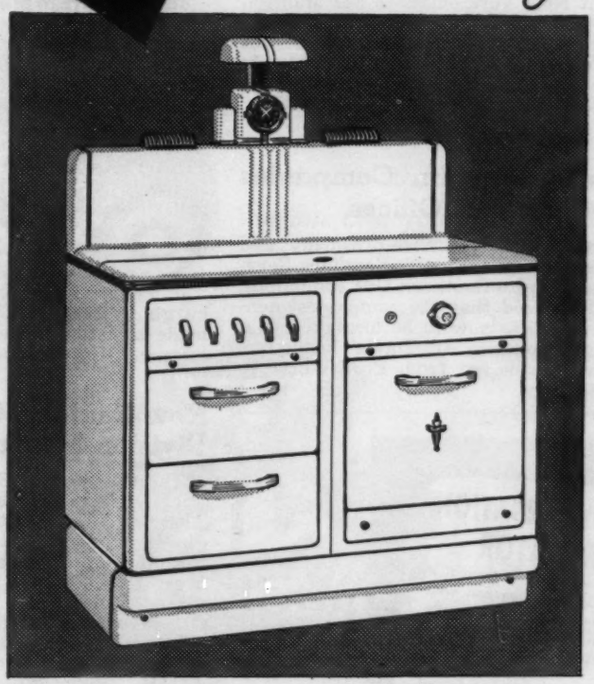
1740 W. WASHINGTON BLVD. ★ LOS ANGELES, CALIFORNIA

Supreme in the Art of GAS Cookery!

First showing!

WEDGEWOOD
Certified Performance CP GAS RANGE

-the cooking marvel of the age



22 best cooking features combined in this outstanding Gas Range

Wedgewood's engineers designed the Certified Performance Range to make cooking easier, faster, cleaner and more economical than ever before!

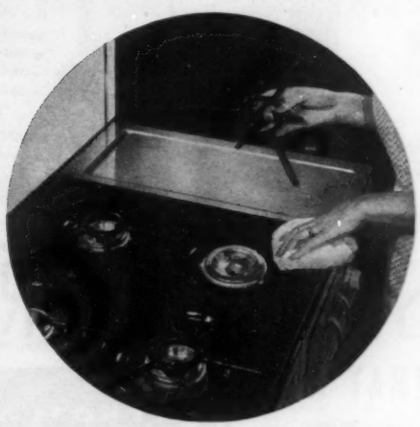
greater economy! greater beauty!

SAVES TIME, FOOD, FUEL

A CP Wedgewood To Fit Every Need!

MODEL 4685A—Six Burners—Double Oven
MODEL 4585—Six Burners—High Broiler
MODEL 4485—Four Burners—High Broiler
MODEL 4385—Four Burner Divided Top with High Broiler
MODEL 4085—Four Burners—Low Broiler

- High-Speed Low-Temperature Oven Burners
- Giant and Standard Speed-plus-Simmer Burners
- Smokeless Astogril Aluminum Rotor Disc Broiler
- Self-Lighting Burners—No Matches.



NEW SECTIONAL SPEED-TOP WITH 3-POINT GRATES

Sectional top easier to handle and clean. Bowl-shaped reflectors save heat. New 3-point Grates get more heat to utensils, quicker.

ALWAYS WEDGEWOOD QUALITY—MAKES FRIENDS FOR GAS

JAMES GRAHAM MANUFACTURING CO. • LOS ANGELES • SAN FRANCISCO • NEWARK, CALIF. • PORTLAND, ORE.

"Calorimetry" is McGlashen's Topic Before S.C.M.A.

"CALORIMETRY," a study made by W. A. McGlashen of the Southern California Gas Co., Los Angeles, to set forth a method of determining the accurate heating value of a gas by use of the water-flow calorimeter, was the featured presentation before the regular monthly meeting of the Southern California Meter Association held October 27 at the Van Matre Inn in Huntington Park, Calif. Association president H. A. Faull of the Southern Counties Gas Co. conducted the meeting.

Mr. McGlashen's work was originally prepared for the Pacific Coast Gas Association, and his paper was published in the September, 1938 issue of *GAS*, page 26.

Guest speaker for the evening was Captain E. A. Chitwood, chief of the Narcotic squad of the Los Angeles Police Department. Captain Chitwood's many years of active service in this field were revealed in his interesting stories.

He was presented through the courtesy of D. M. Hill of the Foxboro Co., Los Angeles.

■ ■

Mountain Fuel Supply Co. To Build 53-Mile Line

Mountain Fuel Supply Co., Salt Lake City, Utah, is constructing 53 miles of 18-in. line paralleling its main line from Bigelow Hill to Coalville, Utah. The line is designed to provide additional capacity for Salt Lake City, Ogden and other towns served by the company. Construction was started on September 29, and will be completed late in November. S. D. Bechtel Co., San Francisco, has the contract and National Tube seamless pipe is being used. Jules D. Roberts is vice president of the utility.

Mountain States Fuel Supply recently completed construction of two dehydration plants at Clay Basin and East Hiawatha. Stearns-Rogers of Denver had the contracts for these plants.

■ ■

Moore Will Head New York Offices of John Zink Co.

J. Arthur Moore will be in charge of the New York offices of John Zink Co., burner manufacturers, Tulsa, Okla., following the removal of the company's present New York offices to 342 Madison Ave., New York City, according to an announcement by John Zink, owner of the company. Mr. Moore was formerly assistant to T. E. Ward, president of Oilfield Equipment Co.

■ ■

Empire Southern Companies Move General Offices

James A. Davis, vice-president and general manager, Empire Southern Service and Empire Southern Gas companies, has announced that the companies' general offices are now to be located in Big Springs, Texas. Mr. Davis' headquarters will be moved from Fort Worth to Big Springs.

THE CONDENSATION ELIMINATOR
is used where space is limited. It eliminates Condensation and with its Draft Construction prevents costly preheated air from escaping out of the chimney. That means warmer basements—5°-7° F. and produces a big saving in fuel. Don't forget! —the Condensation Eliminator helps you save money.
Condensation Engineering Corporation
335 South Western Avenue, Chicago

STANDARD PRODUCTS
THAT ARE
Kitson Standard
Made from finest Quality Metals, carefully machined to exacting specifications. Each thoroughly tested, before leaving the factory, for ease of operation and freedom from leakage.

G-101—Flathead Special Gas Stop
KITSON COMPANY
2409-15 Westmoreland St. Philadelphia, Pa.

Williamson, Peoples Natural Gas Co. Executive, Retires

OFFICIALS of Standard Oil companies from New York and Pittsburgh, on October 27, honored E. W. Williamson, manager of The Peoples Natural Gas Co., who retired November 1, after 42 years of service. About 450 attended the dinner meeting. S. E. W. Burnside, secretary of Peoples Natural Gas Co., presided.

R. W. Gallagher, vice president, and William A. Dougherty, attorney, of the Standard Oil Co. of New Jersey, and Frank Lerch, Jr., president of the Natural Gas Companies, Inc., attended. Retired officials who were presented were: J. B. Tonkin, former president, and R. D. Beardsley, former treasurer, of The Peoples Natural Gas Co.

In 1896 Mr. Williamson took his first job in the natural gas industry as a telegrapher for the Mountain State Gas Co. at Schultz, W. Va. He was transferred to The Peoples Natural Gas Co. in 1904, where he became a leaser with headquarters in Waynesburg, W. Va. He was made assistant superintendent in 1910. The same year he was transferred to the Hope Natural Gas Co. as division superintendent of the Mountain State division and River Gas Co., with his headquarters in Parkersburg, W. Va.

Mr. Williamson became affiliated with The Peoples Natural Gas Co. at Pittsburgh in 1919 and the same year was made assistant general manager of the company. He was made manager in 1934.

■ ■

New England Gas Ass'n Division Meetings Held

The Commercial Section of the Industrial Division of the New England Gas Association met October 21, at the Engineers Club in Boston, Mass. James C. Pitman, president and assistant treasurer, J. C. Pitman and Sons, Inc., presented a paper on "Deep Fat Fryers." Other speakers on the program were F. L. Coughlin, Proctor and Gamble Mfg. Co., who discussed deep fat frying, and A. H. Boynton, president, Morandi Proctor Co., Inc., who spoke on food service planning.

With kitchen heating and the CP gas range as the subjects of discussion, the Sales Division of the New England Association met September 23, in Boston. Among the speakers of the day were J. J. Quinn, R. S. Agee, H. E. Dexter, and R. J. Rutherford.

■ ■

Standard Gas Code Amended

At a meeting of the Pacific Coast Plumbing Association, held October 13-15 in Berkeley, Calif., several amendments were made to the Standard Gas Code, sponsored by that association.

Copies of the amended code will shortly be available in printed form and can be secured from the Pacific Coast Gas Association.

■ ■

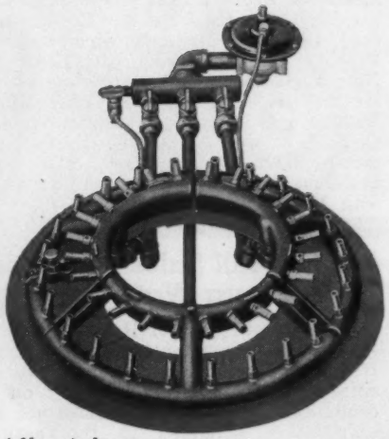
Lawrence Moved to La. Post

A. B. Lawrence, manager of the Arkansas-Louisiana Gas Co.'s Mt. Pleasant, Texas, office, has been transferred to Vivian, La. He assumed his duties in the latter community on October 15.

Yes . . . BARBER *has added*

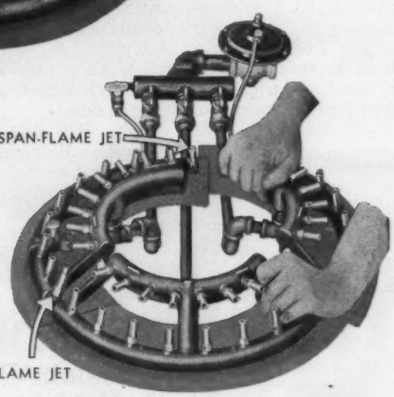
Round Burner "Flexibility"

to its Many Improvements!



(Above) burner set at smallest diameter, ready for installation in boiler.

As usual, BARBER BURNER is out in front with a new feature in *round burner* design which will be instantly appreciated by heating dealers and gas experts. It's the Barber "expansion principle"—which enables round conversion burner assemblies to be quickly and properly adjusted, at time of installation, to the grate diameter of the furnace or boiler. *It means that you can carry a smaller stock.*

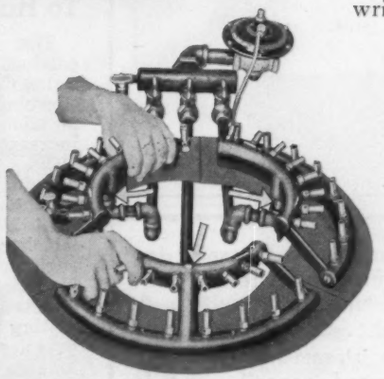


(Right) installer swings the 2 units, connected to outer control lines, outward to required diameter.

For example, as shown in the illustrations of No. 324 Burner, this model has a range of adjustment for combustion chamber diameters of 18″ to 20½″. All Barber Round Conversion Burners are now furnished with this adjustment feature, and can be contracted or expanded to dimensions shown in Barber Catalog.

This unique betterment, exclusive with Barber, applies a new significance to the idea of "tailor-made" gas conversion burners—since the furnace can now be *accurately* fitted with the proper unit for efficient heating. It's a sure thing there will now be many more furnaces and boilers converted to GAS—and many new dealers and distributors converted to Barber Burners! Why not write today for full information?

(Right) burner assembly spread to maximum diameter. Short nipples are furnished for boilers, longer nipples for furnaces.



Baffle Plates are easily trimmed to fit. No refractories needed.

Round Burner models come in 8 sizes for grates 12″ to 34″ in diameter. There is also a wide range of sizes for oblong grates. Patented BARBER Jets insure complete combustion, with a "scrubbing" flame action on walls of firebox. Baltimore Safety Pilot. Listed in A.G.A. Directory of Approved Appliances. Ask for Catalog and Price List on Conversion Burners for Furnaces and Boilers, Burner Units for Gas Appliances, and Gas Pressure Regulators. We supply sales folders, at your request, for mailing to your customers.

THE BARBER GAS BURNER CO., 3704 Superior Ave., Cleveland, Ohio

Address Michigan Inquiries to **The Barber Gas Burner Co. of Michigan, 4475 Cass Ave., Detroit**

BARBER *Automatic* JET GAS BURNERS

William Evans, So. Calif. Gas Co. Executive, Passes

WILLIAM EVANS, assistant to the executive vice president, Southern California Gas Co., and prominent in the industry for many years, passed away suddenly on October 19. Apparently in the best of health, Mr. Evans became ill early Wednesday morning, and died that afternoon. Death was due to heart failure.

He was born in Santa Rosa, Calif., September 7, 1888, and received his primary and business schooling there. In 1918 he entered employ of the Pacific Gas and Electric Co., San Francisco, as a valuation man and later, as special accountant. He came to Southern California in 1927, entering the Los Angeles Gas and Electric Co. organization as assistant valuation engineer on July 27, 1927.

He was made rate engineer of that company in 1930, which position he held until 1937, becoming assistant to the executive vice president of Southern California Gas at the time of the L.A.G. & E.-Southern California Gas Co. merger in May, 1937.

■ ■

Pacific Utilities Group Merger Approved

The Railroad Commission in San Francisco, California, rendered its approval on October 19, of the proposed merger of four utility companies, the Southern Oregon Gas Co., California Utilities Co., Needles Gas and Electric Co., and the Weaverville Electric Co. The new company will be known as the California-Pacific Utilities Co.

The issuance of more than $1,500,000 in stocks and bonds by the Southern Oregon Co., for the liabilities of companies it will absorb, is involved in the transaction. The four companies are associate members of the Republic Electric Power Corp.

■ ■

Quigley Co. Announces New Bulletin on Insulag

The Quigley Co., Inc., New York, N. Y. announces the publication of a new bulletin on Insulag, a refractory lagging for temperatures up to 2200° F. It is claimed that Insulag's low heat storage and low thermal conductivity make it an effective insulator for control of temperatures. It permits reduction in thickness of heavy refractory walls, decreasing the heat capacity of the total structure.

The bulletin contains two charts designed to enable the engineer to determine the heat savings attainable in using Insulag.

■ ■

Business College Offers Gas Measurement Course

"Fundamentals of Gas Measurement and Control" is the title of the course being currently offered by E. C. Cunningham, engineer and teacher, at the Long Beach Business College, Long Beach, Calif. The course, which started October 27, is comprehensive, dealing with the production, transmission and distribution of natural gas.

A.G.A.E.M. Committee on Statistics Appointed

AN Advisory Committee on Statistics for the Association of Gas Appliance and Equipment Manufacturers has been appointed, according to Merrill N. Davis, president of the A.G.A.E.M.

The principal functions of the advisory group will be to decide on questions of statistical policy, and determine the kind of statistics to be gathered and disseminated.

H. N. Ramsey, president of the Welsbach Co., Gloucester City, N. J., will serve as committee chairman. Other members are: W. E. Derwent, vice-president, George D. Roper Corp., Rockford, Ill.; J. S. Drillette, vice-president, Peerless Manufacturing Co., Louisville, Ky.; R. G. Logue, vice-president, Ward Heater Co., Los Angeles, Calif.; H. P. Mueller, president, L. J. Mueller Furnace Co., Milwaukee, Wis.; F. E. Sellman, vice-president, Servel, Inc., New York, and John Van Norden, secretary, American Meter Co., New York.

■ ■

Appoint Hill Sales Manager For Pittsburg Water Heater

The Pittsburg Water Heater Corp. has announced the appointment of Robert C. Hill as general sales manager, effective since October 1. He will carry on the company policy of sales assistance and cooperation extended to the natural, manufactured and liquefied petroleum gas industries, as well as to the plumbing trade.

Mr. Hill has had more than 15 years merchandising experience in the appliance field. He organized and managed the sales force on the Westinghouse refrigerators in New York City. He was assistant to the sales manager of the Philadelphia Electric Co. and Suburban Gas and Electric properties, and was comptroller of all the United Gas and Electric Corp. properties in 23 states.

■ ■

Porcelain Enamel Institute To Hold Annual Meeting

The Porcelain Enamel Institute will conduct its Eighth Annual Meeting and Sales Conference at the Hotel Statler in Cleveland, November 16-17. Plans will be laid at the meeting for promoting the increased business volume expected for 1939. The meeting was previously scheduled for October 25-26.

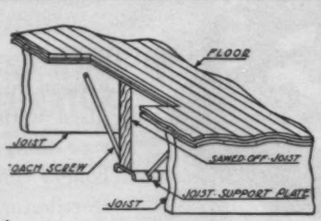
When the Institute held its Third Annual Forum at University of Illinois, October 12-14, more than 200 enamelers registered for the three-day conference. Technical problems, including chipping resistance of enamels, sag resistance, testing methods, effect of certain welding practices on fabricating parts for enameling, were discussed.

■ ■

A. P. I. Publishes New Code

The American Petroleum Institute has announced the publication of Code 50-B, "Measuring, Sampling, and Testing Natural Gasoline (Tentative)," as a companion code to "Measuring, Sampling, and Testing Natural Gas (Tentative)," Code 50-A, issued last year. Single copies are available from the New York and Dallas offices of the Institute.

INLAND ADJUSTABLE JOIST SUPPORT



Ends the Floor Joist Problem

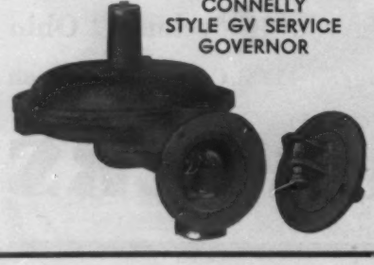
- Eliminates header construction for unsupported joists.
- Provides strong, rigid reinforcement for sawed or weakened joists.
- Easy to install.
- New low price, $2.00 per set. Less 50% to trade. Liberal quantity discounts.
- Write for full information today.

INLAND MFG. CO.

1120 N. Cicero Ave.
Chicago, Illinois

One Plus One Equals
ONLY TWO MOVING PARTS

CONNELLY
STYLE GV SERVICE
GOVERNOR



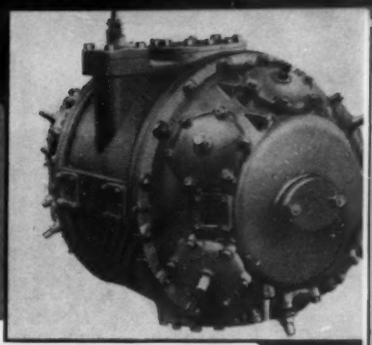
This simple and sturdy Connelly design assures efficient service and economical maintenance. Single unit double-guided valve gives perfect seating. The streamline soft seat affords increased capacity and is easily renewable. Made in two types: weight and spring loaded.

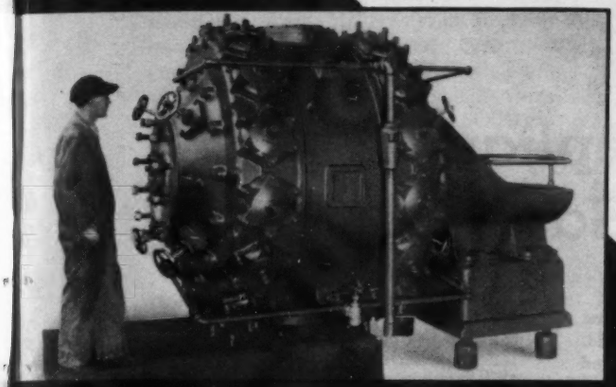
Ask for Bulletin No. 200-B-1.

CONNELLY

IRON SPONGE & GOVERNOR CO.
CHICAGO, ILL. ELIZABETH, N. J.
Pacific Coast Representative:
Harry B. Payne, 3834 Third Ave.,
Los Angeles, Calif.

SURE... There's a Difference in Compressor Cylinders!

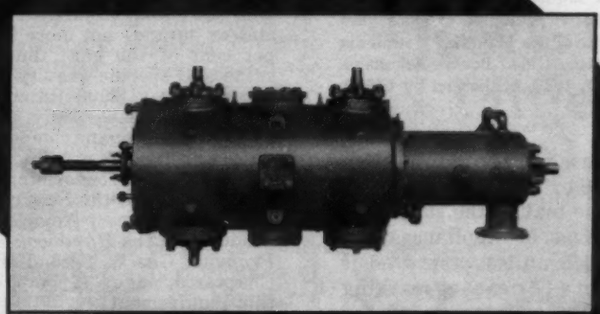


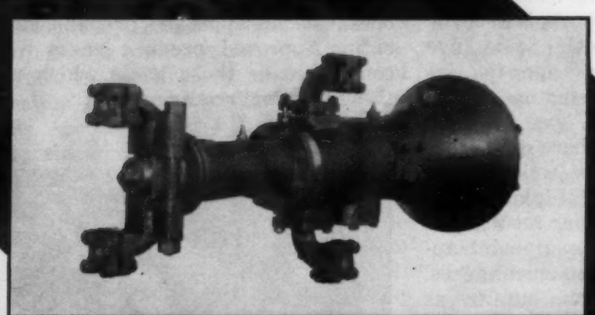


. . . and it's not just in size or shape. There's a vast difference in the strength and wearing qualities of materials that go into them. There's a difference in valve efficiency . . . and valve efficiency depends upon difference in design.

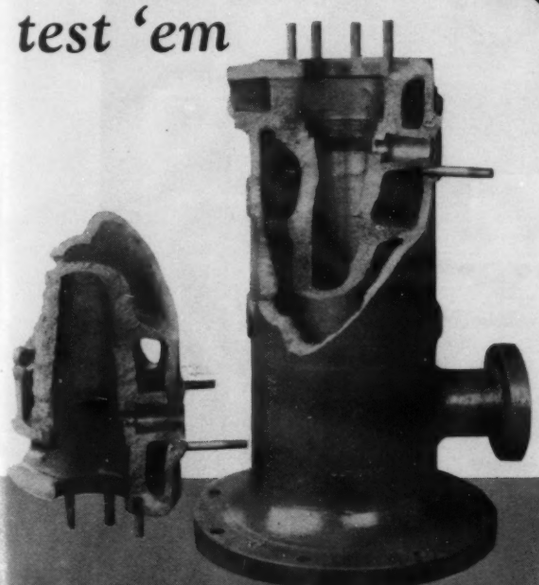
For low and medium pressures, Cooper-Bessemer compressor cylinders are made of Meehanite Metal . . . for high pressures, special analysis steel, either cast or forged. If you are interested in sizes and types, a few of the hundreds of Cooper-Bessemer-built cylinders are shown here . . . cylinders for pressures varying from a high vacuum to thousands of pounds.

Our engineers, modern foundries and machine shops are ready to serve you . . . Specify Cooper-Bessemer Compressor Cylinders and know the difference!

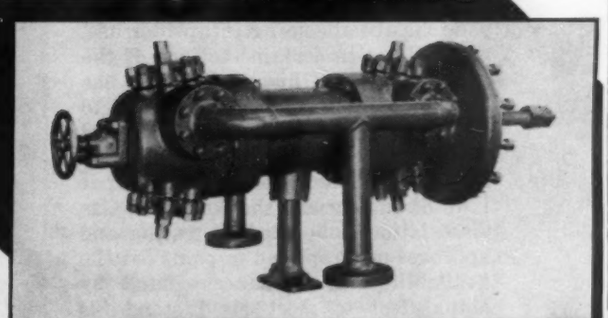


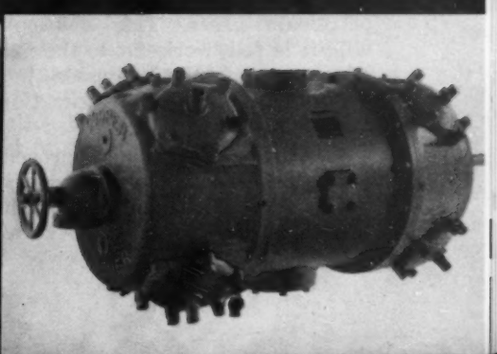


. . . and here's one way we test 'em



A cylinder of Meehanite Metal, designed for 1500 pounds working pressure. Subjected to hydrostatic pressure it ruptured at 10,000 pounds. Note the uniform metal structure of both thick and thin sections.





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BUTANE PROPANE News

Laboratory Approved Appliances For Liquefied Petroleum Gas Usage

● **K. R. KNAPP, chief engineer, American Gas Association Testing Laboratory, Ceveland, Ohio, in a paper, "Laboratory Approved Appliances for Liquefied Petroleum Gases Now Available," presented before the Southern Section of the Liquefied Petroleum Gas Association, Little Rock, Arkansas, September 26-27, 1938.—(Abstract by GAS).**

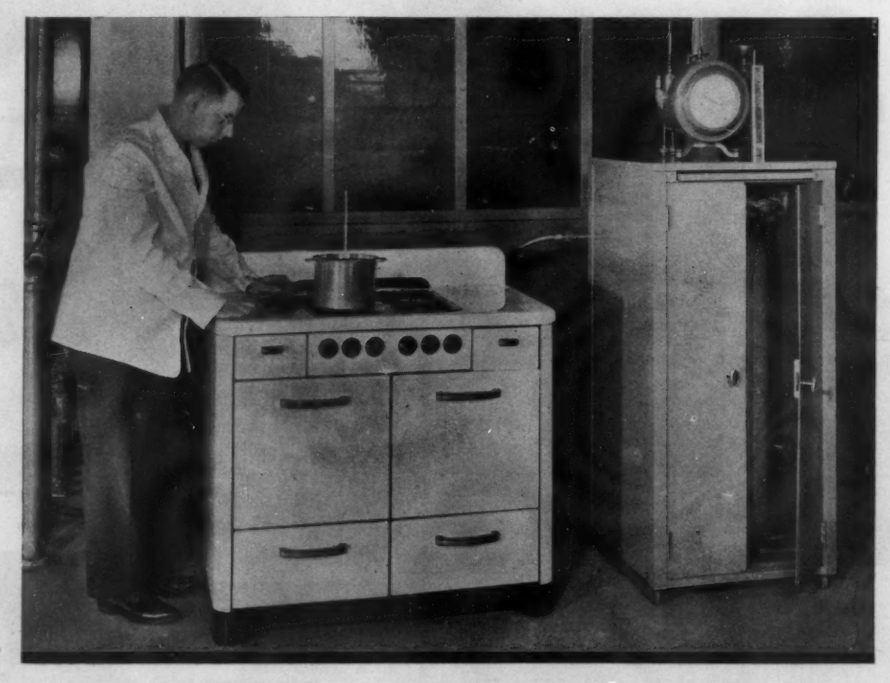
FOR the past 13 years the American Gas Association Testing Laboratories have been engaged in an extensive program for the good of the industry and the public by which gas-burning appliances have been tested for compliance with suitable national standards and approval granted to those found satisfactory. For several years these standards covered appliances for use only with city gases. Some five years ago the increasing use of propane gas in rural and surburban areas where city gases were not available, as well as the establishment of central plants distributing butane-air gas, resulted in a general demand for equipment approved for operation on such gases. More recently, undiluted butane, as well as mixtures of butane and propane, has been coming into wider use, particularly in certain sections of the country. Due to this condition, it has become of increasing importance to have available equipment approved under national standards for use on such gases. The purpose of this paper is to discuss briefly the American Gas Association Laboratories' testing and approval program and to point out the availability of appliances found by actual test to meet rigid standards covering their operation on liquefied petroleum gases. This development will, it is felt, work out to the mutual advantage of all interested in the manufacture, sale and utilization of such equipment.

K. R. KNAPP

Until very recently no approved appliances were available for operation on liquefied petroleum gases with the exception of those approved specifically for propane or for butane-air gas. According to the text of the standards covering approval of appliances for propane gas, each unit so approved is required to bear a permanent marking to the effect that it is approved for operation on approved propane gases only. Approved propane gases were considered as those gases which met the following requirements:

> Propane and/or propylene not less than 95 per cent of the gas; propylene not more than 35 per cent of the propane-propylene content, and allowable impurities (ethane and/or butane) not more than five per cent of the gas; the heating value and specific gravity shall be approximately 2500 B.t.u. per cu. ft. and 1.55 respectively.
> Commercial propane composed predominently of propane and/or propylene and conforming to the specifications of the Natural Gasoline Association of America as reproduced in the *Handbook Butane-Propane Gases*, Second Edition, Chapter 5, page 47, complies with this requirement.

Similarly in the case of appliances approved for butane-air a permanent marking is also required, stating that the appliance is approved for use only



Testing the thermal efficiency of a domestic gas range during the investigation of the performance of appliances when utilizing undiluted butane gas.

with such gases. Therefore, the approval of equipment for operation on undiluted butane or on mixtures of propane and butane beyond that referred to above was not possible and appliances utilizing them could not display the Laboratory Seal of Approval. Within the last five years, when requirements covering propane gas for commonly used types of equipment, such as domestic gas ranges, water heaters, space heaters, and refrigerators became available, an insistent demand for approved equipment has been experienced. Approximately one-fourth of the total manufacturers of approved appliances are now producing equipment for propane gas. The interest and cooperation displayed by a number of producers of liquefied petroleum gases have been of the greatest assistance in bringing about this condition.

Due largely to the number of requests received for approval of equipment on undiluted butane gases, the necessity was recently indicated of expanding the existing requirements for various appliances to include the use of butane gas and so make possible approval on this gas as well. Before this could be done, it was, of course, necessary to undertake a rather complete investigation of the performance of representative types of appliances when operating on such gas. This was in line with the practice customarily followed in the preparation of requirements. The study showed clearly that in all the appliances examined butane imposed a more severe operating condition than did propane. Based on the experimental results secured, it appeared entirely practical to specify that butane gas only need be employed in the conduct of the various tests for approval on both propane and butane, except in special instances. In this way the same practice was followed as has been employed throughout the entire testing program where suitable test gases have been used as indicative of the performance of all similar gases commonly distributed. In view of the more severe conditions imposed by the use of butane, satisfactory appliance performance on such gas also insures that equal satisfaction will result when propane is used, assuming of course that the appliance is properly adjusted to consume its rated input on the gas to be used in all instances. On the other hand, satisfactory operation on propane does not necessarily insure satisfactory performances using butane, due principally to differences in the operating characteristics of the

(Continued on Page 60)

AT LEFT: G. L. Brennan, Phillips Petroleum Co., Detroit; F. B. Boice, Shell Petroleum Corp., St. Louis; W. L. Hauck, Wm. B. Scaife and Sons Co, New York; R. Mylander, Ensign Carburetor Co., Dallas; F. M. Pain, General Water Heater Corp., Kansas City. AT RIGHT: H. C. Pittman, Automatic Gas Co., Tyler, Texas; F. P. DeLarzelere, National Butane Gas Co., Memphis, Tenn.

L.P.G.A. Section Meets at Little Rock; 120 Attend

By A. ERNEST MacGEE
Skelly Oil Co., Kansas City, Mo.

SOUTHERN hospitality and enthusiasm plus hard work on the part of the local committee and Frank Fetherston, national secretary, resulted in a highly interesting and instructive meeting of the Southern Section of the Liquefied Petroleum Gas Association at Little Rock, Ark., September 26 and 27. About 120 attended the meeting and participated in informal and formal discussions on problems of interest. Although the majority of those in attendance were from Texas, Louisiana, Mississippi, Kentucky, Tennessee, Arkansas and Oklahoma, widespread interest was shown by the fact that representatives from Illinois, Indiana, Pennsylvania, California, Michigan, Wisconsin, Ohio and Missouri were in attendance.

The technical sessions reflected a widespread interest among the members for more knowledge about safe utilization of propane and butanes at the bulk plants or distributing plants as well as at the home or other point of use. G. L. Brennan, Phillips Petroleum Co., gave a talk on the "Safe Transportation of Liquefied Petroleum Gases." Another article that added further weight to the general safety features was given by W. C. Buttner, Bastian-Blessing Co., on "Action and Performance of Liquefied Petroleum Gas Safety Valves," while K. R. Knapp of A. G. A. Testing Laboratories made a further contribution with an article entitled "American Gas Association Approval of Liquefied Petroleum Gas Appliances."

An entertaining feature of the program was a motion picture showing "Butane Gas Systems from Manufacture of the Steel to Complete Assembly." An informal talk was presented by R. Mylander, Ensign Carburetor Co., on the utilization of butane as motor fuel for trucks, buses, stationary engines, etc.

The managerial and financial phases of the industry were covered by J. B. Riddick, C. I. T. Corp., in his talk on "Financing of Gas Plants," and by F. R. Fetherston in his paper on "The Federal Wages and Hours Act and Its Effect on the Liquefied Petroleum Gas Industry."

Although there is a large amount of business being done on propane or high pressure gases in cylinders in the South, butanes and underground installations for tank wagon delivery seemed to be the main interest among those attending the meeting. In the southern territory it is being used for cooking, hot water heating, running trucks, space heating, running stationary engines, etc.

New Orleans was selected as the location for the next meeting, to be held in the early spring. The date of the 1939 meeting is yet to be decided by the local officers.

L.P.G.A. Eastern Section Meets in Atlantic City

MEMBERS of the eastern section of the Liquefied Petroleum Gas Association met, October 11, at Atlantic City for a morning and luncheon program, and devoted the rest of the day to the commercial section meeting of the American Gas Association to hear the "CP" gas range program explained. There were 58 delegates present.

Mark Anton, general manager of the Suburban Gas Co., and former president of the National Bottled Gas Association, presided. In his report, Mr. Anton described the present status of I.C.C. regulations as they apply to liquefied petroleum gas, the wage and hour law, and plans for representing the industry at the New York World's Fair, where arrangements have been made to feature liquefied petroleum gas.

Clarence E. Cooper, well known insurance expert, described the benefits of liability insurance to members and cited one case where proper insurance advice had saved one of the members several hundred dollars and more than repaid him for his membership in the association.

H. W. Richdale, vice president of the national association, led a discussion on "The activities and problems of the Industry," and urged that steps be taken to stop the uneconomic practices of "stealing" customers by giving service equipment to customers.

H. Emerson Thomas, Philgas Dept., Phillips Petroleum Co., read a paper, "Some Observations of the Industry," prepared by Colonel George A. Burrell, president, Atlantic States Gas Co., in which Colonel Burrell urged greater inter-company cooperation in developing the potential market for the industry's products.

W. F. Verkamp, president of L.P.G.A., sent a telegram regretting his inability to be present and wishing the section every success in its endeavors to better the business.

Resolutions were passed endorsing the new proposed associate membership, making it possible for smaller dealers to benefit from the association, and referring the proposed association emblem to the national association for further consideration.

The guest luncheon speaker was A. J. Maloney, retail sales manager, Washington Gas Light Co. "Just as we feel it the moral obligation and duty of every employee of our company who lives along our lines to use our gas for cooking, water heating and refrigeration," stated Mr. Maloney, "we have plans afoot which will be released within the next 30 days making it just as obligatory for our employees beyond the gas mains to use your gas rather than any competitive fuel."

Liquefied Gas Appliances

(Continued from Page 59)

two gases. In the event that separate burner equipment is employed for butane and propane, tests are necessary on the appropriate burners for each gas.

In order to properly designate appliances approved for liquefied petroleum gases they are now required to display a permanent statement, reading as follows: "This appliance is approved for use only on approved liquefied petroleum gases." Liquefied petroleum gases are considered as those gases meeting the following requirements:

1. A hydrocarbon product composed predominantly of propane and/or propylene.

2. A hydrocarbon product composed predominantly of butane and/or butylenes.

3. A uniform mixture of the two hydrocarbon products indicated in (1) and (2).

Commercial propane and butane conforming to the specifications of the Natural Gasoline Association of America as reproduced in the *Handbook Butane-Propane Gases*, Second Edition, chapter 5, page 47, or any uniform mixture of such gases comply with this requirement.

Requirements covering gas ranges and gas water heaters, making possible their approval for liquefied petroleum gases, were approved by the Approval Requirements Committee at its meeting in July. Requirements covering other equipment such as space heaters, refrigerators, hotel and restaurant ranges, deep fat fryers, unit broilers, and portable bake ovens are in process of preparation. The initial equipment approved for liquefied petroleum gases appeared in the September 1 Supplement to the July 1 issue of the *Directory of Approved Gas Appliances and Listed Accessories*. The products of eight manufacturers are shown in that publication, and undoubtedly more will be added in the near future. This particular supplement lists those products approved during the preceding month.

An article was published in the *American Gas Association Monthly* for September, 1938, entitled "Research Adds New Laboratory Test Gas" by W. R. Teller, research engineer, A.G.A. Testing Laboratories. This describes in detail the results of the various studies conducted in the preparation of requirements for liquefied petroleum gases. It contains much valuable material on the physical properties of propane and butane as well as data on combustion and other operating characteristics of such gases. It also includes interesting comparisons on the construction and performance requirements for these two gases as contrasted to those for city gas. Its review is suggested to anyone desirous of obtaining further information on the subject.

■ ■

Propane-Air Gas Plant to Serve Central City, Neb.

Completion of the municipal distribution system for propane-air gas in Central City, Neb., is scheduled for November 15, according to late press reports. The city council of the community voted the purchase of propane-air gas plant equipment from Phillips Petroleum Co. on September 30. WPA crews are now laying connecting mains from the plant to the present distribution system. New extensions have been added to the old system.

Four storage tanks will be used by the Central City system. Gas will be shipped in liquid form to the community by tank cars.

■ ■

Huge Butane-Operated Trucks to Be Used on Dam Job

A fleet of 18 butane-operated trucks, equipped with 150 hp. motors, are being constructed in Cleveland, Ohio, for the Pacific Constructors, Inc., builders of the Shasta Dam, Calif.

With a capacity of 25 cu. yds., eight times that of the average dump truck, the new trucks are to be so large they must be built to order. They are to be used in the excavation of 3,500,000,000 cu. ft. of dirt and rock in the early stages of the dam construction. The cost of each truck will be approximately $15,000.

Woodill Named Chairman of Western L.P.G.A. Section

ORGANIZATION meetings to form a Western Section of the Liquefied Petroleum Gas Association were held at the St. Francis Hotel, San Francisco, on October 4, and at the Mayflower Hotel, Los Angeles, October 6. F. R. Fetherston, secretary of the association, was instrumental in calling and conducting both meetings.

GILBERT WOODILL

Gilbert Woodill, Ensign Carburetor Co., Los Angeles was elected chairman of the Section and L. C. Roney, L. C. Roney, Inc., Los Angeles was named secretary at the Los Angeles meeting which attracted an attendance of 150.

Ellsworth L. Mills, The Bastian Blessing Co., Chicago, and W. L. Hauck, Wm. B. Scaife & Sons Co., Oakmont, Pa., attended the meetings and contributed to the organization of the Western Section.

Safety practices will receive first consideration from the newly formed organization. Committee appointments will be made in the near future, according to Mr. Woodill.

■ ■

Calif. Natural Gasoline Men Plan Meeting This Month

The California Natural Gasoline Association will hold its 13th Annual Fall All Day Meeting on November 4, at the Ambassador Hotel in Los Angeles, according to H. R. Linhoff, association president.

Featuring subjects of both specific and general interest, the all-day program will include the following papers: "A Hydrometer Test Applied to Liquefied Petroleum Gases," by W. M. Schaufelberger; "Advances in Design and Operation of Compressor Plants," T. Hume West; "Possibilities and Limitations of the Production of Oil Under Pressure Maintenance from California Fields," A. C. Rubel; "Effect of Pressure Maintenance on Gasoline Plant Design," Henry N. Wade; and "Possible Utilization of Lighter Hydrocarbons Such as Ethane, Propane and Butane for the Production of Chemicals," by Dr. Robert E. Vivian.

■ ■

New Butane Gas Plant Now Serves Ukiah, Calif.

The changeover from manufactured to butane-air gas has now been effected in Ukiah, Calif., following the completion of the municipal butane gas plant late in September. Gas was turned into the mains on October 1.

■ ■

Gas Cleans Tools

In Portland, Ore., Tracey and Co. have installed a gas-fired degreaser which which causes dirt and grease to disappear from automotive equipment and tools as vapors rise from the solution. Grease is removed without having completely to disassemble parts.

THE CONTINUOUS CHOICE OF HACKNEY CYLINDERS IS BASED ON PERFORMANCE

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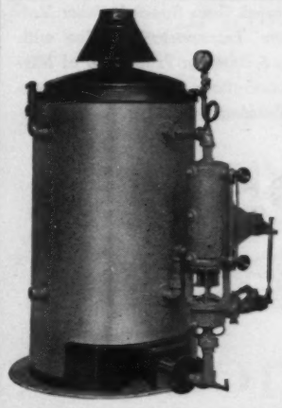

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Minnesota Company Records Liquefied Gas Expansion

AN extensive expansion program is now under way in the territory of the Minngas Co., Tracy, Minn., where the company is planning to serve liquefied petroleum gas in the entire area within a radius of 50 miles of Tracy, according to H. H. Henley, Minngas Co. president. This plan, when completed, will incorporate 90 communities in the company's service area.

The company, which has been in existence little more than a year, has acquired franchises from the Liquefied Natural Gas Corp. in Tracy, Lamberton, Sanborn, Currie, Jeffers, Butterfield, and Comfrey. Of these towns, the company is now serving gas in Tracy, Currie, Jeffers, Lamberton, and Sanborn. Installations were made in the two latter towns late in September. Other towns now served by the company are: Garvin, Balaton, Tyler, Dovray, Revere, Walnut Grove, Lucan, Milroy, Cottonwood, Arco, and Marshall. These are within 30 miles of Tracy.

Serving propane gas only on a public utility basis, the company sells its gas in every event through a meter located in the customer's basement. The meter dial reads in the equivalent of 530 B.t.u. gas.

In Tracy, Minngas headquarters, a 15,000-gal. storage tank is maintained with the required pumping equipment and loading docks in its warehouse for the purpose of filling tanks from dealers who own their cylinders on a wholesale basis.

The city of Tracy is served gas by three methods. Originally, as gas applications were received, the customer was given gas service immediately by the installation of a meter and regulator in the customer's basement and connecting to the customer's appliances. On the outside of the building, a 150-lb. content cylinder was installed with a first stage regulator to give immediate service. As the customers are located, underground tanks interconnected with copper tubing are installed in the alleys. The individual 150-lb. cylinders are removed and again installed in outlying districts.

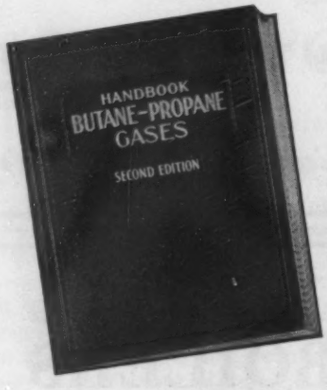
ABOVE: A typical underground cylinder, installed at entrance of an alley, to serve a group of customers. BELOW: Installing copper service connection from copper mains in alley, replacing service from cylinder shown in background.

This grouping is done only when there are sufficient customers to make this the cheapest method of operation, requiring a smaller investment than the installation of the individual 150-lb. content cylinders. As these groups have enlarged and come closer in contact with each other, a number of them have been interconnected directly to the 15,000-gal. storage tank, to the end that, after one year's operation, the company has approximately 2½ miles of copper installed underground in mains, laterals, and service connections. There are some groups still not interconnected with the general system, and in the outlying districts there are some 150-lb. cylinders still serving individual customers.

In the other towns in which the company has franchises for the use of streets and alleys, the same system is followed except that there are no large storage facilities as in Tracy. In these cases groups are served from larger underground cylinders installed in the alleys or boulevards.

Customers in towns and villages where the company has not as yet secured franchises, are all served with the installation of one or more 150 lb.

HANDBOOK
BUTANE-PROPANE
GASES



415 Pages

CONTENTS: Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Transportation: Use with other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalogue Section.

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content cylinders, as the demand requires, and interconnections are only made where it can be done by interconnecting through private property, with the usual easements. In all towns receiving this service, the company collects an additional 25 cents per month per customer, due to the fact that the advantage of interconnection across alleys, streets, or other public places is lost.

In towns other than Tracy, the company makes arrangements with a local merchant for a company headquarters where the customers may pay their monthly gas bills or transact other business for the company normally done in the gas company's office. The so-called representative receives compensation in the fact that many people to whom he might sell his merchandise and gas appliances enter his place of business monthly.

■ ■

Bureau Announces Revision Of Propane, Butane Circular

The Bureau of Standards has recently revised *Propane, Butane, and Related Fuels*, Letter Circular LC 503, which has now been printed as Circular C 420. The circular describes the properties, sources, and methods of distributing these gases and includes a brief discussion of methods of storage and utilization, including the costs and uniformity of service, with reference to domestic appliances.

In Justice to Gas Heating

(Continued from Page 30)

it is checked on the job by a heating supervisor and not accepted if found wrong in any detail. A letter is then sent to the purchaser, giving him the full consumption estimate. Upon acceptance, installation is made by either the purchaser's own plumber or one assigned by the gas company. A book of rules, regulations, descriptions, etc., is furnished to all plumbers who have to be licensed and who have to live up to them in every detail. All work is supervised by gas company shop men and every gas unit has to be installed in proper manner for the plumber does not receive payment for his labor until the installation conforms with all rules and regulations of the gas company.

The gas company, after installation is made, assumes all service which is free (indefinitely) and available 24 hours of the day. Boilers are cleaned immediately after installation. Chemical analysis is made continuously until boiler water shows absolutely pure and the boiler is free of priming action. Jobs are checked periodically, and a continuous check-up during the heating season is made on gas bills to ascertain whether the fuel consumption is in balance with the degree days during the reading period of the bill. Any discrepancy is checked at once on the job. Separate meters are being installed for gas heat to enable the gas company to provide this continual check-up for its customers' benefit. This strict attention and free service on the part of The Brooklyn Union Gas Co. keeps gas bills at a minimum and the customer satisfied. That is why less than one per cent of the 6,000 gas heating jobs installed in less than three years were removed. The majority of these removals were made for reasons other than costly operation.

Of almost 100 jobs my firm has installed, not one user has shown any desire to change to oil. In fact we are receiving many prospects from these satisfied gas users. In all cases the actual gas consumption has been from 10 to 30 per cent lower than the estimate submitted. This has been the experience of most plumbers who have sold gas . . . it stays put.

■ ■

Richard S. Shannon Resigns

Richard S. Shannon, general superintendent of production for Continental Oil Co., Rocky Mountain Division, Denver, Colo., has resigned his post with the company. James Johnston, assistant to the head of Continental's production department, Fort Worth, will succeed him.

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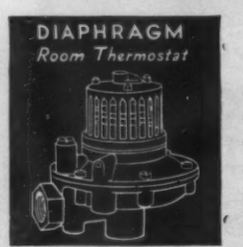

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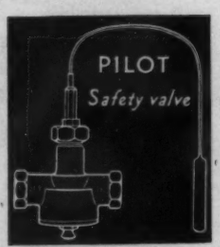

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Preview of coming campaigns by

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

GAS APPLIANCE SOCIETY OF NORTHERN CALIFORNIA

1938 FALL GAS HEATING CAMPAIGN

With cold weather just around the corner, P. G. and E. is launching its annual industry campaign on gas heating equipment.

Advertising will be carried by all local papers, by hundreds of outdoor posterboards and various supplementary media, and the policy, as usual, will be to tell the comforts and economies of gas heat, leaving all reference to make, prices, terms, exclusive features, etc., to be supplied by dealers.

The first three advertisements in a series of nine will appear this month. Refer to our advance proofs for new copy angles, see your local paper for publication dates and begin immediately to prepare a series of tie-ins.

NOV. 7-25

G 211-1138

DEALERS: By watching this page from month to month you can keep informed of sales promotional campaigns to be sponsored by the Pacific Gas and Electric Company and the Gas Appliance Society. Detailed information will be supplied, as usual, through the mail. If such information is not received, call our local office or write Gas Appliance Society, 1355 Market Street, San Francisco, California.

Today's Standard

NO-OX-ID "GSC" applied hot in 1/32 in. thickness, plus the Wrapper shield thoroughly bonded by machine application, produces a dense, resisting coating, and has the necessary characteristics required today—such as great waterproofing stability, high dielectric strength, and lack of chemical changes representing deterioration.

Note Dearborn Field Service: Engineer in photograph above on job now in progress. Inquiries invited.

Dearborn Chemical Company
310 So. Michigan Ave., Chicago
Los Angeles: 807 Mateo Street Phone TRinity 3385
San Francisco: 421 Bryant Street Phone SUtter 8688

Carbon Dioxide Manufacture

(Continued from Page 37)

liquid ammonia before expansion, then into the ammonia-CO_2 heat exchanger. This completes its refrigeration functions and it now passes into an absorber unit where it is sprayed with and absorbed in weak aqua ammonia from the generator. The strong aqua ammonia thus formed is pumped from the absorber back to the generator where it again gives up its load of NH_3. Between the absorber and generator is a heat exchanger where the hot weak solution from the generator preheats the strong solution entering the generator from the absorber. At the same time the cooling effected increases the capacity for absorption of the weak solution. You will note that in both the CO_2 system and the refrigeration system, heat exchangers are utilized extensively to eliminate heat losses.

The dry ice machine consists essentially of a cylinder with hydraulically operated piston and cylinder head. In operation the cylinder head is held in place and the piston is drawn back the full length of its travel. Liquid CO_2 direct from the storage tank is then injected into the cylinder through expansion nozzles and the expansion of a portion of the liquid to gas cools the remainder so that it solidifies and falls as snow in the cylinder. Approximately one-half the weight of liquid entering the cylinder becomes snow, the remainder as cold gas returns through the "blow back" heat exchanger to the gas storage tank.

When sufficient snow has been formed the liquid is shut off and the snow is compressed into cakes. These cakes are 19.6 in. square, from 11½ to 13 in. thick and average from 240 to 250 lbs. in weight. After ejection from the machine they are checked for size and weight, sawed into quarters, wrapped in paper and packed in insulated storage ready for shipment.

For bottling, the liquid CO_2 from the storage tank is passed through a pump where its pressure is boosted to approximately 500 lbs. per sq. in. and delivered into a header from which the steel cylinders or bottles are filled. It is necessary to thus boost liquid pressures to overcome gas pressures developed in the containers during the filling operation.

The product is now in the two forms in which it is marketed. Its uses are many and varied. As dry ice it has a refrigeration value of 272 B.t.u. per lb. as against 144 B.t.u. per lb. for water ice. It has added advantages in being compact, easily handled and dry, and because it passes directly from solid to gas it is clean in usage.

The liquid CO_2 is principally used for carbonating beverages. Dry ice has its greatest use in the ice cream industry, but has as well a wide use as a preservative and freezing agent in other fields.

Thus we give you another application in a relatively new and rapidly growing field which may offer a constantly increasing market for natural gas.

■ ■

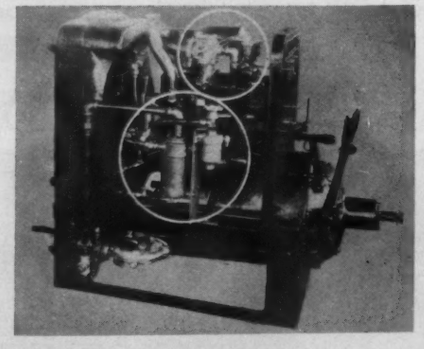
So. Calif. Gas Co. Completes New $12,000 Hanford Office

Southern California Gas Co. announces completion of a new $12,000 office building at Hanford, Calif., to serve the 3500 meters in that city and vicinity. The new gas service headquarters was officially opened for business on Saturday, October 29, an open house, at which George Wiley, Visalia district agent for the company, served as host. Many local consumers attended the event.

LEADING ENGINE BUILDERS CHOOSE ENSIGN

International oil field power units have established many records for operating economy and efficiency. ENSIGN Natural Gas Carburetors are factory equipment on these engines. ★ Since 1911, ENSIGN has been making accurate carbureting equipment. Today, more than 90% of the leading engine manufacturers use ENSIGN products. ★ For the BEST in Carburetors, (Gasoline, Natural Gas, Butane-Propane, Combination Gas and Gasoline)—use ENSIGN!

INTERNATIONAL P-12 Power Unit . . . for Oil Well Pumping equipped with ENSIGN Carburetor for Butane or Natural Gas fuels.



ENSIGN CARBURETOR CO., LTD.
LOS ANGELES • DALLAS • CHICAGO

1938
P.C.G.A. COOPERATIVE ADVERTISING CALENDAR

P. C. G. A.
Norman R. McKee, President
Clifford Johnstone, Managing Dir.

NOVEMBER

COMMITTEE
A. C. Joy (Chairman), P. G. & E.
J. S. Spaulding, So. Calif. Gas Co.

Another advertisement in the unusual series featuring . . .

INTERESTING PERSONALITIES

This attractive bride, like other western women featured in our 1938 "domestic" advertisements, voluntarily contributes a sincere, convincing testimonial on gas fuel in the home. ★ Such leaders influence thousands.

MY ADVICE TO OTHER BRIDES—
PLAN YOUR HOME, TOO—all gas
"I do all my own housework, yet still have ample leisure for the social activities and outdoor sports I so enjoy." ★ This lovely bride, Mrs. Robert Chamberlin Johnson of Brentwood Heights, Los Angeles, has discovered a secret known to thousands of experienced homemakers: *One doesn't need a maid in order to broaden one's life and safeguard health and beauty.* ★ Automatic cooking, house heating, refrigeration and water heating—these four time and work-savers are easily available to every home through today's superb gas appliances. "Bride's budget" terms are offered by your Gas Company or Appliance Dealer. Operating costs are low. Inquire today.
GAS
THE MODERN FUEL
— YOUR QUICK, CLEAN, ECONOMICAL SERVANT

This Job of Selling Gas

(Continued from Page 29)

dealer outlets. What will this vast army of dealers do to us at their present rate of progress with electric equipment, especially ranges and refrigerators, if and when electric ranges should gain public acceptance? Maybe I can show you by taking the case of automatic refrigerators which we all admit now have that so-called public acceptance. For instance, last year such dealers sold about 1,600,000 electric refrigerators. In other words, in 12 months, dealers opened the doors of a vast number of American homes to the acceptance of mechanical refrigerators, a great part of which would have been gas refrigerators if this last mentioned class of dealers had been sold upon the superiority of gas refrigeration by our aggressive sales cooperation and sales training.

Need I go further to show you the value of this group of dealers to us if they were enlisted as our allies? Need I go further to show you what these dealers could do to bolster our range sales if they were enlisted to our cause? Need I go further to warn you of the harm they can and will do if we compete with them or fail to educate them to the superiority of our product and extend to them equal cooperation?

These aggressive merchandisers with whom I say we are not fully cooperating are of a type such as have banded together into trade groups and associations with whom we have never entered into any kind of cooperative agreements. They are represented by such organizations as the National Retail Dry Goods Associations for department stores, the National Retail Furniture Dealers Association, the National Retail Hardware Dealers Association and the many other local and national organizations representative of specialty appliance dealer groups. Remember, I am referring to the department store, furniture and hardware stores and specialty appliance dealers and *not* to the plumbers or heating contractors. I am not considering the water-heater sales and house-heating sales for which this last-mentioned group of associations and kitchen and home appliance dealer groups are practically useless. I am talking about refrigerator sales and range sales for which our plumbing and heating contractors are of least aid to us in securing. You could consider all the competitive electric refrigerator and range sales made by plumbing and heating contractors as being of absolutely no consequence in a national picture. These electric type of kitchen appliance sales were made by the class of dealer who maintains his own sales floor, sales force, newspaper advertising, buys his own stock, sells it, delivers it, installs it, finances it, collects for it and services it. It's the type of dealer who could do exactly the same thing with gas appliances, but during the last seven years we have sorely neglected him with sales training and sales cooperation while we have been earnestly trying to force plumbing and heating contractors into that kitchen appliance market for which they have not qualified.

People buy ranges and refrigerators like their beautiful upstairs home furnishings, by shopping around among home furnishers and merchandisers — viewing merchandise displayed in beautiful settings—probably in response to striking newspaper advertising and neat, courteous and capable salesmanship, of the type which would be highly impractical in a plumbing and heating shop.

Someone says, "Yes, but I can't get such dealers to cooperate—they want too much and are too electric-minded." In answer to that, I say to you we had better give them as much or more than our competitors have given them, and finally, I say if we can't sell these people and their employees—nearly 50,000 such business establishments—then we shouldn't expect to be able to sell anyone else. Every one of these merchants and his employees are our consumers just as much as a customer who is not in the merchandising business. If we can't sell them, I don't know how we can ever expect to sell any other customer. But, the important thing is that once they are sold the sale here multiplies itself a hundred-fold—perhaps thousands of times, like the proverbial spreading rings around a pebble which has been dropped into the pond.

In conclusion, let us bear in mind that it is time we approached the representative associations of these special types of dealer outlets, and entered into cooperative agreements based on practically the same standards that have been so ably applied

EXCLUSIVE design of Mueller Gas Era Furnace gives longest life—lowest operating cost.

L. J. MUELLER
FURNACE COMPANY
MILWAUKEE

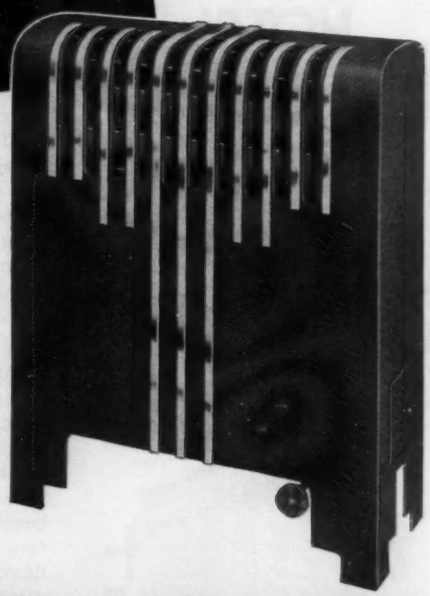
GAS—810 South Spring Street; Los Angeles, California

Yes! SEND ME GAS

for ☐ 1 Year at $1.00, ☐ 3 Years at $2.00
Other than United States, $2.00 per year

Name..... Position.....
Company.....
Address.....
City..... State.....
☐ Check enclosed ☐ Send bill

THERE ARE HUNDREDS OF PLACES TO SELL GAS THROUGH THE Humphrey 30-C CIRCULATOR



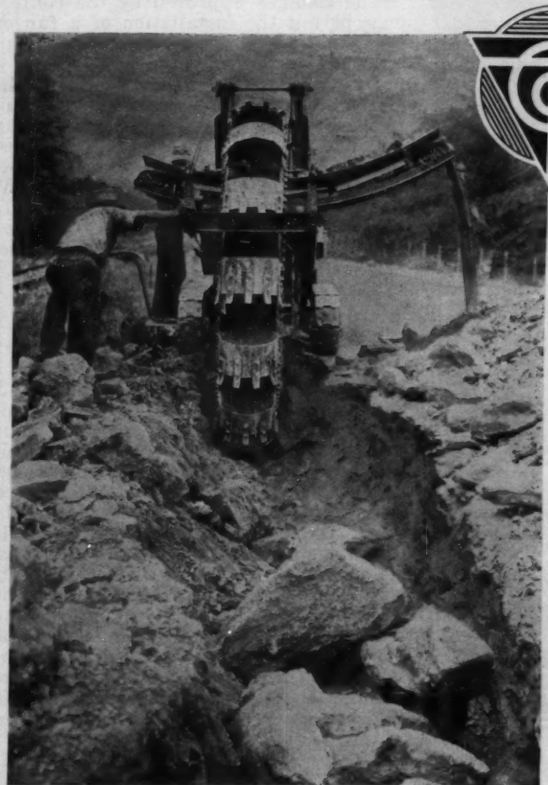
Substantial gas loads await your cultivation with the Humphrey 30-C Circulator. Homes, offices, small stores, rest rooms—wherever room-size space needs a source of heat—there is an opportunity to place this modern heater.

The Humphrey 30-C Circulator burns natural, manufactured, or liquified petroleum gas. It has an input rating of 30,000 B. t. u. per hour, and can be equipped with a fan if desired.

Ask our representatives to tell you more about this great load builder or write for complete information and prices.

GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN
23 Warren St., NEW YORK CITY 2nd Unit Santa Fe Bldg., DALLAS 475 Eleventh St., SAN FRANCISCO

Your Trench Costs Less with CLEVELANDS



Dig Anywhere—Anytime . . . .

—and no wonder, for they produce results!

Over seventeen years of pioneering in the building of compact, mobile machines has placed "Clevelands" in the front rank for economy.

Rugged and dependable, they handle the toughest jobs at satisfactory speeds. Yet, because of their extreme flexibility and modern construction they enable you to cut the corners—eliminate lost time and waste motion—produce more at less expense.

Let us prove to you "Clevelands" value on your next job without obligation. Write for details today.

THE CLEVELAND TRENCHER COMPANY
"Pioneer of the Small Trencher"
20100 ST. CLAIR AVE. CLEVELAND, OHIO

Special Trailers for Truck Speed Transportation

In Los Angeles
it's the
HOTEL
CLARK
Fifth and Hill

555
Rooms-Baths

from $2.50 PER DAY

Famous for Good Food from Coast to Coast

RIGHT downtown in the center of things. Easy chairs, sleep-inspiring beds, large rooms with luxurious fittings.

P. G. B. MORRISS
Manager

to our plumbing and heating friends. Then it will be the duty of every gas company and gas equipment manufacturer to join hands to make all such trade agreements work with both our so-called "basement appliance dealers" and our "kitchen appliance dealers." Whatever the reasonable cost may be to approach the "kitchen appliance dealer group," it should be well worth while when one considers that, on the surface, here appears to be an opportunity to switch over one-half the electric-range sales to gas-range sales and an opportunity to open a market for upwards of 1,600,000 more gas refrigerators per year.

We know that electric-equipment manufacturers have bettered our gas-equipment manufacturers in national promotion schemes and in establishing dealer contracts, franchises and training programs. For that very reason I believe electric utilities have become more conscious and appreciative of the value of such dealers than have gas utilities. To offset this condition, I believe that all our manufacturers of gas appliances and every gas company sales manager and official should join forces and become even more dealer conscious than our competitors.

At any rate, we as manufacturers are beginning to appreciate this great opportunity and offer our time and efforts for planning to help our industry realize every advantage. It is certainly a problem which neither the manufacturers nor the utility group alone can solve. It takes a follow-through which could only be developed cooperatively.

■ ■

Building Oklahoma Natural Gas Co.'s Cement Field Line

(Continued from Page 27)

quantities, will flow through the network of pipe lines already in the service of the Oklahoma Natural Gas Co. through Eastern and Northern Oklahoma. Gas will flow through the system by natural well pressure until such time that pressure is reduced on the producing formation to a point where compressors will be required. The extent of the field is not known at this time, as deeper drilling in the old oil producing section of Cement field has uncovered large reserves of gas, in addition to the supply west of the town to which the new line is being connected.

■ ■

Range Installation Section Of Building Code Changed

At the convention of the Pacific Coast Building Officials Conference, held in Reno, Nevada, October 4-7, changes in Section 3711, on the installation of gas ranges, of the Uniform Building Code, tentatively approved in 1937, were made final.

The changes approved by the conference permit the installation of a fan or other adequate kitchen ventilation as an alternate to the range vent.

More than 200 cities throughout the United States are now using this Uniform Building Code, 55 cities having adopted it during the last 18 months.

The Pacific Coast gas industry was represented at the convention by H. W. Geyer, Southern Counties Gas Co., H. L. Warren, Southern California Gas Co., and W. F. Neiman, Pacific Gas and Electric Co.

■ ■

East Ohio Office Managers Are Transferred

Following the retirement of W. J. Morgan as manager of the East Ohio Gas Co.'s Canton office, company managers have been transferred in four Ohio communities. Terry W. Brown has succeeded Mr. Morgan in the Canton office, Mr. Brown was formerly manager of the East Ohio Massillon office. John E. Ryan has been transferred from his post as manager of the Barberton office to assume Mr. Brown's former duties in Massillon.

Charles E. Warner, formerly Cuyahoga Falls manager, is now located in Barberton. L. R. Seeds, a supervisor from the Akron office, succeeds Mr. Warner as Cuyahoga Falls manager.

MUELLER GAS DISTRIBUTION EQUIPMENT

The time-tested Mueller line includes Mueller Evenflow Service Regulators, Gas Stops, Service Stops, Stove Stops, Drilling and Tapping Machines, service boxes, meter trims and similar equipment. Write for description and prices.

MUELLER CO., Los Angeles, Calif.

Factories: Decatur, Ill.; Chattanooga, Tenn.; Los Angeles, Calif.; Sarnia, Ont.
Branches: New York and San Francisco

BASO

THERMO ELECTRIC SAFETY CONTROL FOR GAS BURNING APPLIANCES

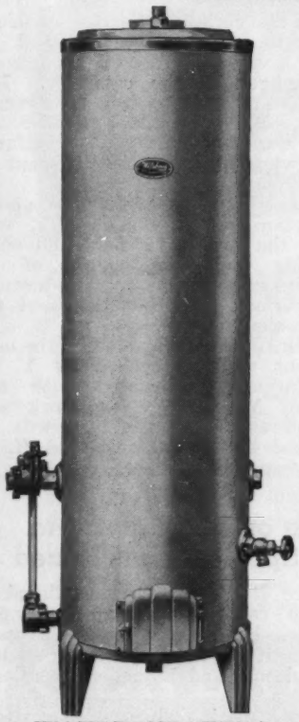
BOILERS ★ FURNACES ★ CONV. BURNERS ★ SPACE HEATERS ★ UNIT HEATERS ★ AIR CONDITIONERS OVENS ★ RANGES ★ WATER HEATERS, ETC.

GAS VALVE SERIES 500

ELECTRIC SWITCH SERIES 600

MILWAUKEE GAS SPECIALTY CO.
MILWAUKEE ★ WISCONSIN

Welsbach APPLIANCES MAKE GAS

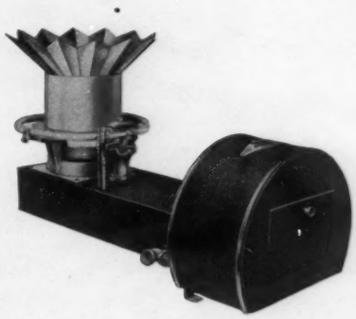


WATER HEATERS

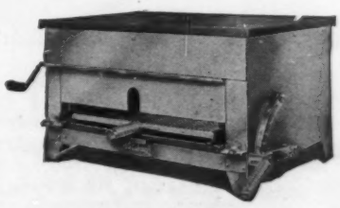
A Logical, Economical Choice

—and Keep It Safe From Competition

Hundreds of gas companies know and appreciate this. Experience has taught them that Welsbach Appliances can always be depended on to give truly modern performance at low operating cost—with a minimum of servicing. This makes them easy to sell and keeps them sold !



FURNACE BURNERS



BROILER-GRIDDLES

Welsbach Company

Gloucester City, N. J.—Branches—Chicago, San Francisco

Protects gas users—

"CALODORANT" gives a swift warning against leak danger

CALODORANT gas odorizing agent has a distinctive and penetrating odor that is generally associated with manufactured gas. For over seven years leading gas companies have found it to be a vigilant detector of dangerous and costly leaks. Immediately upon the addition of CALODORANT to gas, it gives warning of leaks in distributing systems and household appliances—a warning that may prevent loss of life and property. CALODORANT will remain completely vaporized during long periods of transmission and the odorizing power remains unimpaired. It adds no odor to burning gas. It is non-corrosive — non-injurious to equipment or users.

CALODORANT

Reg. U. S. Pat. Off.

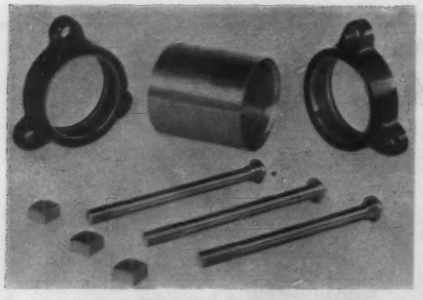
GAS ODORIZING AGENT

Available in tank cars and iron barrels

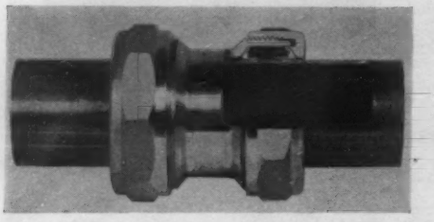
Address Inquiries to

Standard Oil Company of California

225 Bush Street, San Francisco, Calif. 30 Rockefeller Plaza, New York, N. Y.



Raybould Coupling—Bolted Type



Raybould Coupling—Screwed Type

Meter Co. Named Distributor For Raybould Couplings

PITTSBURGH Equitable Meter Co., Pittsburgh, Pa., has been appointed as sole distributor for Raybould Couplings and Fittings, manufactured by the Raybould Coupling Co. of Meadville, Pa. Grover E. Seaberg, manager of the Coupling and Fitting Division, will direct sales for the meter company.

The Raybould Coupling is a patented article, said to furnish a simple and leakproof method of joining plain end pipe. It consists of two resilient compression rings, metal bushed at either end, encased in two flanges or follower rings which bear against a center ring acting as a spacer between the flanges. The compression rings provide the sealing medium while the flanges sustain the mechanical forces applied in tightening up the coupling. In sizes smaller than three inches the flanges consist of two compression nuts and the coupling is fastened by tightening these nuts on a threaded center ring. Larger sizes employ long track head bolts and nuts to draw up the two flanges.

For complete information write Pittsburgh Equitable Meter Co., 400 North Lexington Ave., Pittsburgh, Pa.

■ ■

Series of Promotional Letters Is Compiled

The Blodgett Oven Co., Burlington, Vt., announces the compilation of a series of educational and promotional letters containing information for gas company and dealer salesmen of heavy duty hotel and restaurant gas appliances.

This series stresses the many uses of modern baking and roasting ovens, methods to use in developing prospects.

The letters are available for direct mailings from the factory office to individual salesmen or in quantities to sales managers for their distribution. Samples may be obtained from The G. S. Blodgett Co., Inc., Oven Department, 53 Maple Street, Burlington, Vt.

Technical Service Division Added to Clark Bros. Co.

CLARK Bros Co., Olean, N. Y., has formed a new department to be known as the Technical Service Division, according to an announcement by J. B. O'Connor, vice-president and general sales manager of the company. Mr. O'Connor is now also acting as a member of the Board of directors of S. R. Dresser Manufacturing Co., Bradford, Pa., following his recent appointment to that position.

The Clark Brothers department, under the direction of F. W. Laverty, will correlate the company's field and shop engineering and take charge of all process design problems, making a study of the various oil production and refinery problems.

In Clark Brothers Tulsa office, the new department will be headed by T. C. Webb, formerly associated with the Bureau of Mines. In New York and Dallas offices the department will be represented by F. J. Jobst and H. J. Turner, respectively.

■ ■

Bulletin on Regulator and Meter Specifications Issued

Reliance Regulator Corp., Alhambra, Calif., in cooperation with American Meter Co., has recently issued a new bulletin entitled "Instructions for Ordering Regulators and Liquefied Petroleum Gas Meters."

The new bulletin defines types of applications and working conditions and presents specifications for the appropriate types and sizes of meters and regulators.

The purpose of this publication is not to supplant the advisory service offered by the engineering departments of Reliance Regulator and American Meter, but to afford detailed data in easily understandable form. Copies may be obtained from Reliance Regulator Corp., Alhambra, Calif., or any American Meter Co. office.

■ ■

Laub Appoints Committee To Revise Bulletin

H. G. Laub, chairman of the Technical Section of Pacific Coast Gas Association has appointed B. G. Williams, measurement engineer, Southern California Gas Co., and E. H. Fisher, superintendent, Coast Industrial Gas Co., to represent the P.C.G.A. on a joint committee which will make revisions in Bulletin TS-353 of the California Natural Gasoline Association. This bulletin deals with the metering of gas through orifice meters.

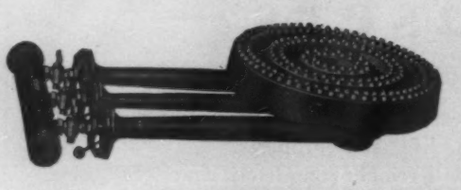
The Southern California Meter Association will also be represented on the committee.

■ ■

Statistics Show Gain in Gas Customers for First 8 Months

AN increase of 250,000 in the number of customers served by natural and manufactured gas utilities on August 31, over the number recorded on the same date in 1937, was reported by Paul Ryan, chief statistician of the American Gas Association, at the A.G.A. convention in Atlantic City last month. Total customers served for the eight-month period numbered 16,901,800.

Tremendous Heat for Every Application with All Kinds of Gas with JOHNSON No. 40 ABC Triple Ring Burner



Heavy cast iron construction and perfect supply of secondary air assure clean, intense heat and trouble-free service. The unique Patented JOHNSON Direct Jet Bunsen Burner gives you outstanding efficiency with every kind of gas, including Propane and Butane! Rings may be installed singly, in pairs, or triply as shown. Each ring has separate Burner, Venturi Mixer and Tube. Get economy and high performance. Write for free complete catalog today!

JOHNSON GAS APPLIANCE CO. Cedar Rapids IOWA

PORCELAIN ENAMEL INSTITUTE, INC.
612 NORTH MICHIGAN AVENUE • CHICAGO

Please send me, absolutely free, a copy of your new, easy-reading, profusely illustrated sales manual on Porcelain Enamel.

Name_____

Firm_____

Address_____

The HUMPHREY AMBASSADOR
(Good Will for Gas Heating)

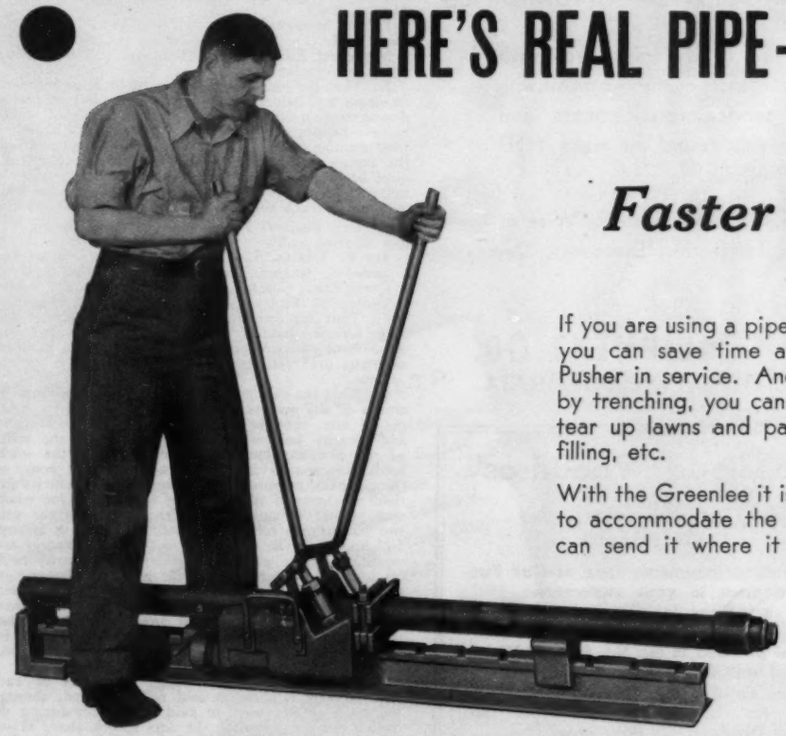
SUCCESSFULLY SOLVES THE "COLD ROOM" PROBLEM

There's no better way to sell people on the convenience, cleanliness, and comfort of complete forced-circulation gas heating than to give them a taste of it by installing a Humphrey Ambassador in their hard-to-heat rooms or offices. Such a sales program looks to the future, yet pays immediate dividends because each Humphrey Ambassador has an input rating of 40,000 B. t. u. per hour.

We supply complete selling help bulletins and sales promotion material. Write for full particulars.

GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN
23 Warren St., NEW YORK CITY 2nd Unit Santa Fe Bldg., DALLAS 475 Eleventh St., SAN FRANCISCO

HERE'S REAL PIPE-PUSHING ECONOMY



Let us tell you all about this compact, labor-saving tool. No obligation, of course.

Faster GREENLEE *Hydraulic* PIPE PUSHER *Easier*

If you are using a pipe pusher that requires considerable man power, you can save time and money by putting a Greenlee Hydraulic Pusher in service. And if you are making underground installations by trenching, you can save still more. No longer is it necessary to tear up lawns and pavements or to do extensive trenching, back-filling, etc.

With the Greenlee it is only necessary to make a trench long enough to accommodate the pusher with a section of pipe, and one man can send it where it is wanted, simply by pumping the handles. The speed of pushing can be adjusted for varying soil conditions, and a push of from 4 to 7 feet, depending on the length of base used, can be made with but one setting of the pipe clamp. It has capacity for pipe up to 4-inch, will exert a pressure of 40,000 pounds against the pipe clamp, and is simple to set up and easy to operate.

GREENLEE TOOL CO., 1700 Columbia Ave., ROCKFORD, ILLINOIS

Utilization of Waste Tar From Natural Gas Described

THE Bureau of Mines, U.S. Department of the Interior, has announced the recent issue of a report describing the results of experimental work conducted to find uses for tar that may be formed in the conversion of natural gas to liquid fuel. The report is entitled "Studies Pertaining to the Catalytic Hydrogenation of Pyrolytic Tars," Technical Paper 587. It has been compiled by H. M. Smith, Harry T. Rall, and Peter Grandone.

The Petroleum Experiment Station of the Bureau of Mines in Bartlesville, Okla., conducted the experiments, the results of which are included in the report. The process described in the paper is designed to increase the total yield of liquid products from pyrolysis of natural gas by 25 per cent.

The immediate object of the work was to convert the naphthalene fraction of the tar, formed by pyrolysis of natural gas, into liquid products by hydrogenation, using the hydrogen formed in the cracking reactions to carry out the conversion in a continuous process where hydrogenation follows directly after pyrolysis.

Reports may be obtained from the Superintendent of Documents at 10 cents per copy.

■ ■

Spencer Thermostat Opens N. Y. Office, Derby in Charge

The Spencer Thermostat Co., Attleboro, Mass., has announced the opening of an office at 110 East 42nd St., New York City, N. Y. J. N. Derby, Jr., who will cover sales in the metropolitan territory, will be in charge of the new office.

Mr. Derby, previous to joining Spencer Co., was connected with The Mercoid Corp. for 12 years. During the past three years he has acted as vice-president in charge of eastern sales with headquarters in New York.

In addition to his activities in the New York area, Mr. Derby will have charge of Spencer Klixon stoker control sales. The company has developed a stoker timer operating on the thermal principle.

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Bulletin Promotes CP Ranges

The ninth issue of "Planning for the Future," a bulletin published by Fenton Kelsey Co., Chicago, for those interested in building, has been devoted to the Certified Performance Gas Range.

A. P. I. To Hold Annual Meeting This Month

THE American Petroleum Institute will hold its 19th Annual Meeting, November 14-18, at the Stevens Hotel in Chicago. One of the events of the meeting will be the election of nine officers, 54 directors, and 60 divisional general committee members, whose terms expire this month.

Guest speakers at the meeting will be General Hugh S. Johnson and Donald R. Richberg, two former administrators of the National Industrial Recovery Act.

The first two days of the meeting will be devoted to separate committee sessions, following which group sessions of the Divisions of Production and Refining will be held November 17 and 18.

Among the topics to be discussed will be production practice, pipe line transportation problems, and surface forces in oil and gas production.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of GAS, published monthly, at Los Angeles, California, for October 1, 1938.

State of California, County of Los Angeles, California—ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Jay Jenkins, who, having been duly sworn according to law, deposes and says that he is the Publisher of GAS, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Jay Jenkins, 810 So. Spring St., Los Angeles, Calif.
Editor, Stanley Jenks, 489 Fifth Ave., New York, New York.
Managing Editor, Arthur Rohman, 810 So. Spring St., Los Angeles, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is —. (This information is required from daily publications only.)

JAY JENKINS,
(Signature of Publisher.)

Sworn to and subscribed before me this 22nd day of September, 1938.
(Seal) Alva J. Lloyd, Notary Public.
(My commission expires Oct. 24, 1940.)

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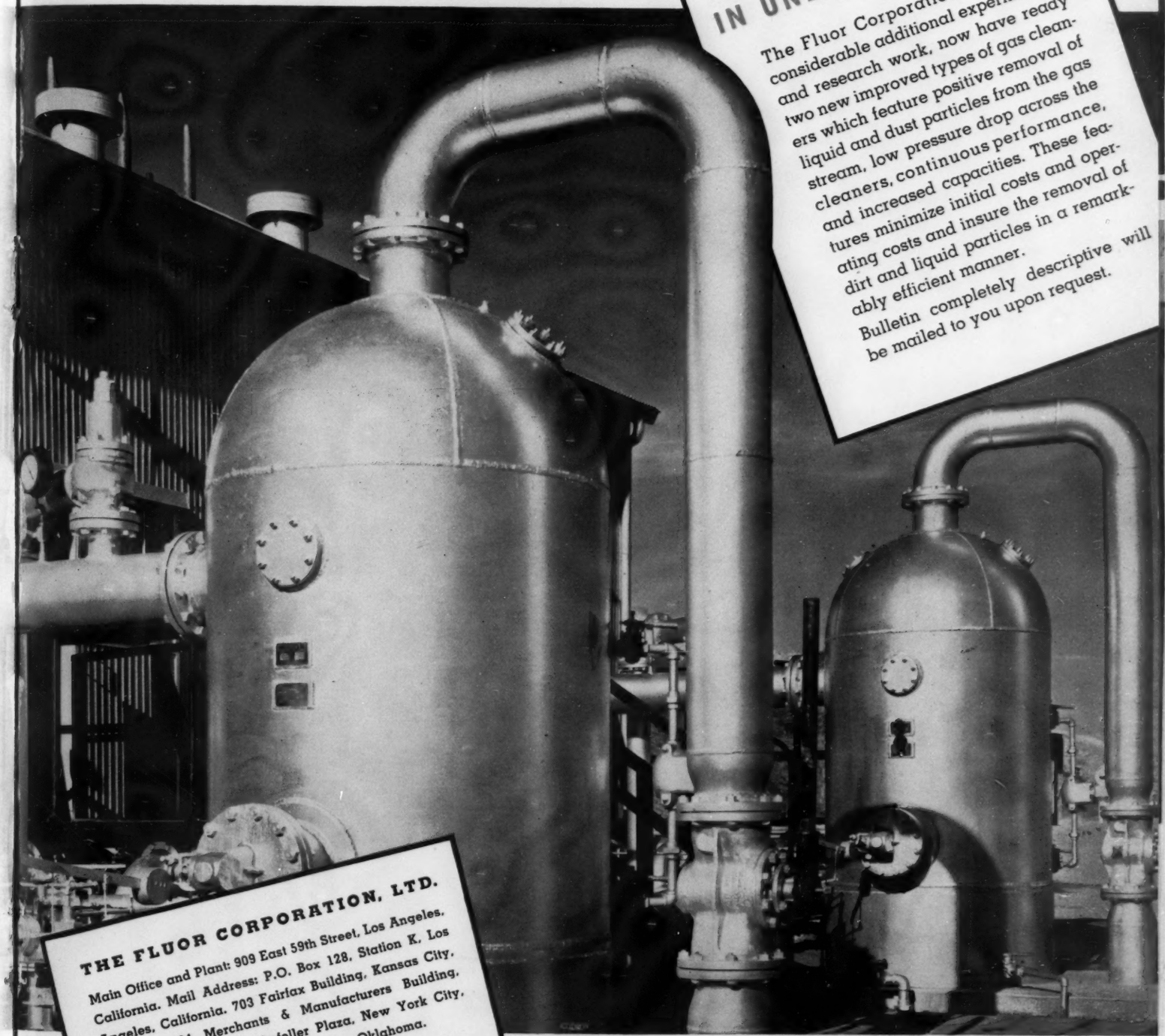

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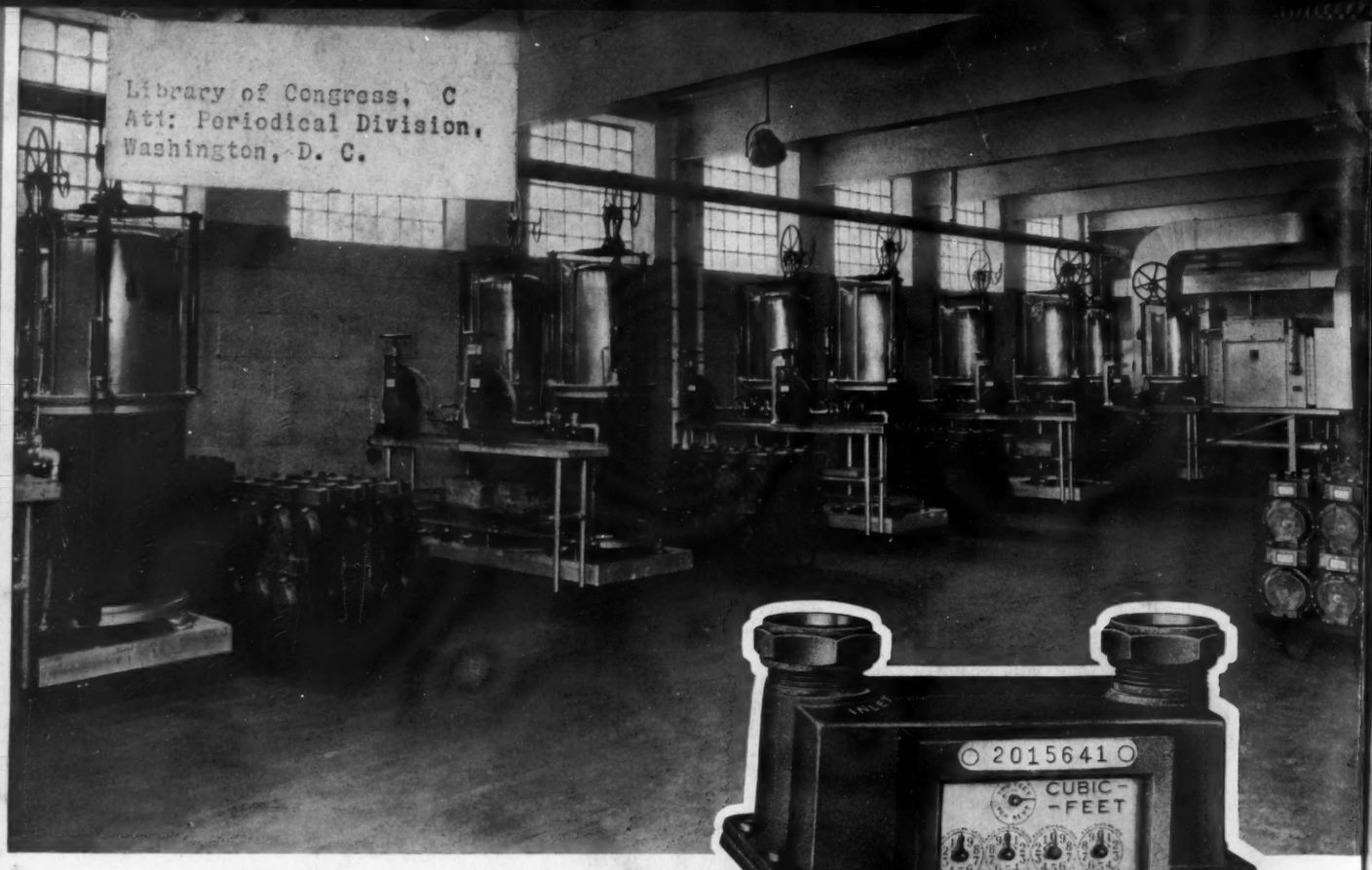

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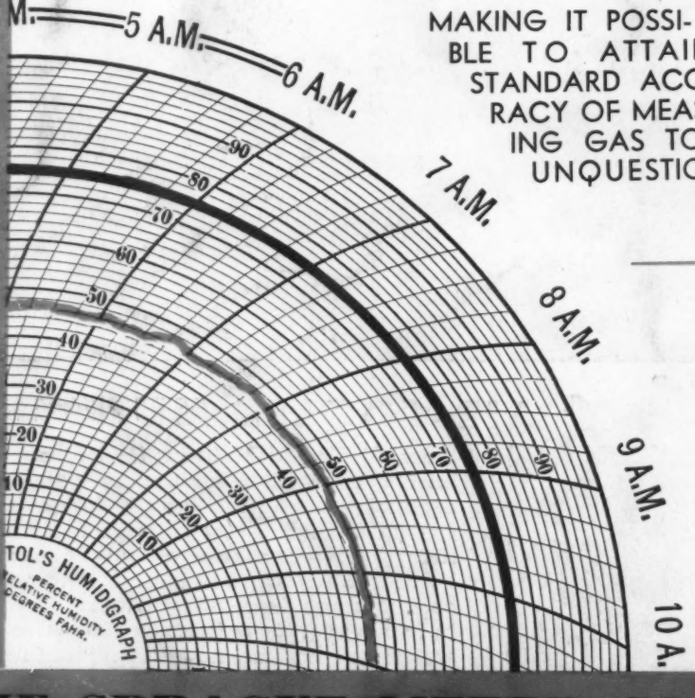

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